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BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF BLACK MOUNTAIN SEWER CORPORATION, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO: SW-02361A-08-0609 **NOTICE OF FILING REBUTTAL TESTIMONY**

Black Mountain Sewer Corporation ("Company") hereby submits this Notice of Filing Rebuttal Testimony in the above-referenced matter. Specifically filed herewith is Company's Rebuttal Testimony, which includes the following testimonies, along with supporting schedules and/or attachments:

1. Rebuttal Testimony of Gregory S. Sorensen;
2. Rebuttal Testimony of Thomas J. Bourassa (Rate Base); and
3. Rebuttal Testimony of Thomas J. Bourassa (Cost of Capital).

DATED this 20th day of October, 2009.

FENNEMORE CRAIG, P.C.

Arizona Corporation Commission
DOCKETED
OCT 20 2009
DOCKETED BY

By _____
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ORIGINAL and thirteen (13) copies of the foregoing were filed this 20th day of October, 2009, with:

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BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF BLACK MOUNTAIN SEWER CORPORATION, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO: SW-02361A-08-0609

REBUTTAL TESTIMONY OF

GREGORY S. SORENSEN

October 20, 2009

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I. INTRODUCTION AND PURPOSE OF TESTIMONY.

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Greg Sorensen. My business address is 12725 W. Indian School Road, Suite D-101, Avondale, AZ 85392.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Liberty Water, formerly known as Algonquin Water Services ("AWS") as Director of Operations for the Western Group. For purposes of this rebuttal testimony and this rate case, AWS and Liberty Water can essentially be used interchangeably.

Q. DID YOU PREVIOUSLY PROVIDE TESTIMONY ON BEHALF OF THE COMPANY IN THIS CASE?

A. Yes, my direct testimony was filed on December 19, 2008, with the Company's application.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. To further support BMSC's application for rate relief by responding to certain aspects of the direct testimony of Utilities Division Staff ("Staff"), and the Intervenors, RUCO, Boulders Home Owners Association ("BHOA"), Town of Carefree ("Town"), and Dennis E. Doelle, D.D.S. ("Doelle").

Q. HOW IS YOUR REBUTTAL TESTIMONY ORGANIZED?

A. I have provided a section in rebuttal to each of the other parties' direct filings. The Company's accounting witness, Tom Bourassa, will also be filing rebuttal and he will also address many of the issues in dispute between the parties.

Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY?

A. My testimony addresses certain aspects of the other parties' direct filings. First, I respond to the Town's testimony regarding giving a refund to 33 homeowners in the Carefree Estates HOA. Next, I respond to Doelle's request for a new rate

design for BMSC and BHOA's testimony concerning the settlement agreement between BMSC and BHOA. Then, I address RUCO's direct testimony relating to cost of capital from an operations and investment perspective and also respond to RUCO's testimony regarding non-recurring expense and wastewater treatment expense. Finally, I discuss Staff's recommendation concerning return on equity and the hook up tariff, as well as Staff's adjustments for testing expenses, truck lease and labor expenses.

II. REBUTTAL TO TOWN

Q. HAVE YOU REVIEWED THE TESTIMONY OF BRIAN KINCAID ON *BEHALF OF THE TOWN?*

A. Yes, and I am familiar with the issue he has raised.

Q. HOW DOES THE COMPANY RESPOND?

A. The same way we have for the past three years after the issue was first brought up – if there is a remedy that is neutral to BMSC, we support it.

Q. IS THERE SUCH A REMEDY?

A. Yes, the same one the Town, RUCO and BMSC proposed – give a refund to the 33 homeowners in the Carefree Estates HOA, and debit the accounts of the remaining customers.

Q. HOW MUCH WOULD THE OTHER CUSTOMERS BE DEBITED?

A. That depends on the number of customers that have their bills debited. Unfortunately, it has been three years since the last rate case decision was issued and some customers have come and some have gone. We don't think we can debit new customers that never got a refund. But, at the time of the prior proposal, the per bill impact would have been relatively minor – a one-time charge of approximately $6.62.[1] The refund was more than $400.

[1] *See* Kincaid Dt. at 5-7.

Q. WHY WAS THIS MISTAKE MADE IN THE FIRST PLACE?

A. There was no mistake. The refund in the last rate case was calculated by all parties by dividing the total dollars to be refunded by the number of customers we bill. For these 33 locations, BMSC only bills one customer – the HOA.

Q. WHY IS THAT, MR. SORENSEN?

A, I have no idea. There does not appear to be anyone affiliated with this utility or its past ratemaking that can explain why the HOA is billed as one customer.

Q. IS IT FAIR FOR 33 HOMES TO PAY THE SAME AS A *SINGLE FAMILY* HOME FOR SEWER SERVICE?

A. No, and that's not happening. The HOA is billed on the basis of having 33 individual units.

Q. THEN WHY DIDN'T THE CAREFREE ESTATES HOA GET 33 SEPARATE REFUNDS?

A. Because they were treated as one customer, no matter how large, how small, or how much flow they generate. Commercial customers got the same refund as residential customers. This is how everyone that calculated the refund did it, and the Town never spoke up in complaint. No party to the last rate case did. It is just one of those things no one considered until the Town brought it up after the last decision was issued.

Q. BUT DIDN'T BMSC BENEFIT BY MAKING 32 LESS REFUNDS THAN IT ALLEGEDLY SHOULD HAVE?

A. No, we refunded every dollar we were ordered to refund. This is not about how much we should have refunded, but about who gets the refunds. And, therefore, if the Commission wants to correct it, it just has to take some money from those they believe were overpaid and give it to those they believe were underpaid. But the

money for the refunds should not come from BMSC because the Company has already done exactly what the Commission ordered.

Q. DO WE KNOW HOW MANY CUSTOMERS ARE STILL ON THE SYSTEM THAT RECEIVED A REFUND?

A. We figure there are 1,671 current customers that received the refund, including the Carefree Estate HOA, and would in turn need to receive the debit if the Commission chooses to direct a refund to the 33 CIE HOA customers. As I said, I don't think we should debit someone that did not get a refund. Nor can we obtain a refund from customers that have departed the system. All of which means that to issue 33 refunds of $404.64, we need to debit the 1,671 accounts by $7.51 each. I note that the refund amount, $404.64, is less than the $412.15 we refunded, by the amount of the debit. In other words, every one getting a refund would get the same amount.

Q. GOING-FORWARD, WOULD THE COMPANY OPPOSE ALL 33 HOMEOWNERS BEING MADE CUSTOMERS OF BMSC AND ELIMINATING THE HOA?

A. If that is what the customers want, and what the Commission believes should happen, and there is no harm to BMSC, I do not see why we would oppose that.

Q. DO YOU HAVE ANY OTHER COMMENT ON THE ISSUE RAISED BY THE TESTIMONY OF THE TOWN?

A. Just that we work closely with the Town on many issues, and had tried to resolve this one sometime ago. I am not pointing any fingers, rather, just making sure it is clear that BMSC and Liberty Water have done nothing wrong here, and we have tried at their own expense to resolve the issue. Therefore, any resolution should be neutral to BMSC.

III. REBUTTAL TO DR. DOELLE

Q. HAVE YOU REVIEWED DR. DOELLE'S DIRECT TESTIMONY?

A. Yes.

Q. WHAT RELIEF DOES DR. DOELLE SEEK IN THIS PROCEEDING?

A. Well, I am not entirely sure but I think he wants the Commission to approve a new rate design for BMSC.

Q. DOES DR. DOELLE OFFER AN ALTERNATIVE RATE DESIGN?

A. Not really, he says that the rates need a "more rational basis" and says that basing rates on water usage would be more rational.

Q. DO YOU AGREE?

A. Yes, although even basing sewer rates on water use has its draw-backs. For instance, water used for irrigation does not affect the amount of sewage a commercial customer conveys to the Company, but would be included as part of the water usage that the customer would be billed upon.

Q. THEN WHY DOESN'T BMSC BASE ITS SEWER RATES ON WATER USAGE?

A. Because we are not the water provider, and there are multiple water providers in the area of our CCN. Even assuming that these providers would all share the information on water usage with us in a timely matter to avoid billing delays, it would be very difficult, and likely costly, to coordinate water usage billing for a sewer company that shares a service area with multiple water providers.

Q. ON WHAT BASIS DOES BMSC BILL ITS CUSTOMERS?

A. Residential customers are billed on a flat rate per month. I do not believe there is anything unusual about that. Commercial customers are billed based on estimated flows from ADEQ Engineering Bulletin No. 12, with certain specifically

enumerated exceptions – "Special Customers". The Company has sought to eliminate these special billing rates in this proceeding.

Q. WHAT WOULD BE THE IMPACT ON DR. DOELLE?

A. He would be treated like every other commercial customer – estimated flows would be determined by Bulletin No. 12.

Q. WHY DOES BMSC USE ADEQ BULLETIN NO. 12 IN THIS WAY?

A. Because the Commission ordered us to in at least the last two rate cases.[2] I don't know where the idea originated, but we have to have some proxy of sorts for determining billing to commercial customers, unless we were to go to flat rates for all commercial customers.

Q. WHY HASN'T BMSC RECOMMENDED AN ALTERNATIVE RATE DESIGN IN THIS RATE CASE?

A. Because it isn't an issue for us, and other than Dr. Doelle, who also brought a complaint years ago to the Commission and had his rate lowered then, no one is complaining. It is never our goal to add issues and complexity to Commission proceedings.

Q. BUT WHAT ABOUT DR. DOELLE?

A. As I testified, we have asked for the elimination of all "special" rates for commercial customers. But if the Commission feels that some special relief should be afforded Dr. Doelle, BMSC is not opposed to it so long as it does not negatively impact the revenue requirement or the Company's opportunity to earn its authorized rate of return.

[2] Decision No. 69164 (December 5, 2006); Decision No. 59944 (December 26, 1996).

IV. REBUTTAL TO BHOA TESTIMONY

Q. HAVE YOU REVIEWED THE TESTIMONY BY LES PETERSON ON BEHALF OF THE BHOA?

A. Yes, I have.

Q. THE BHOA SEEKS COMMISSION APPROVAL OF A SETTLEMENT AGREEMENT ENTERED INTO BETWEEN BMSC AND THE BHOA. DID BMSC ENTER INTO THIS AGREEMENT WITH THE BHOA?

A. Yes, that is my signature on behalf of BMSC on the signature page.

Q. WHY DID BMSC ENTER INTO THIS SETTLEMENT AGREEMENT?

A. Because a large group of our customers, supported by the Town, wants our wastewater treatment plant closed. Rather than fight with them, we thought coming up with a means to satisfy their concerns would be welcomed by the Commission.

Q. SO BMSC SUPPORTS BHOA IN SEEKING APPROVAL OF THE SETTLEMENT AGREEMENT?

A. Yes, although we do not necessarily think the Commission must formally approve the agreement itself. But there is certain relief necessary before BMSC will undertake the plant closure, and only the Commission can grant that relief.[3]

Q. CAN YOU EXPLAIN FURTHER?

A. I think the language of the agreement speaks very well for itself –

> VI. Approval of Cost Recovery for Plant Closure. ACC must approve a cost recovery mechanism that permits BMSC to recover a return on and of the capital costs of closure, which costs include, without limitation, the costs of procuring additional capacity from the City of Scottsdale, the costs of engineering and other analyses necessary to complete the closure, any system upgrades required as a result of the closure and/or the delivery of the flows previously treated at the Plant to the City of Scottsdale. BMSC must also be authorized recovery of any reasonable costs of reaching agreement with the BHOA, the City of Scottsdale and the Resort as

[3] Settlement Agreement at paragraph 2.a.vi.

> required to fulfill the terms of this Agreement, including, without limitation, the costs of obtaining all necessary approval from the ACC, including rate case expense. BMSC shall have no obligation under this Agreement if the ACC does not approve such cost recovery mechanism as acceptable to BMSC in its sole discretion.[4]

Put simply, BMSC will agree to take the steps necessary, including funding, to close the plant, reroute flows and obtain alternative capacity. But we want assurance from the Commission, ahead of time, that if we do so we will not have to wait for a return on and of that investment, or be second guessed as to why we spent more than a million dollars closing the plant.

Q. DO YOU KNOW HOW MUCH THE PLANT CLOSURE WILL COST?

A. No. But we do know that we can buy replacement capacity from the City of Scottsdale for $6 per gallon, or $720,000, to replace the capacity at the plant. We are working on the remaining engineering from which further cost estimates can be refined. At this time, we estimate that the plant closure project will cost in excess of $1.5 million.

Q. HOW DO YOU ENVISION RATE RECOVERY WORKING?

A. Ultimately, the Commission will have to approve some sort of mechanism that will allow the Company's rates to be increased once the project is complete. Whether that requires a surcharge or some other sort of adjuster, I will leave to the Commission and the various ratemaking experts.[5] As I have testified above, we will undertake to close the plant as the BHOA wants, so long as we obtain the necessary cost recovery.

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[4] *Id.*

[5] Bourassa Rb. at 29-30.

Q. BUT MR. SORENSEN, ISN'T THAT ESSENTIALLY ASKING THE COMMISSION TO GIVE BMSC A BLANK CHECK?

A. Absolutely not. The costs incurred will be readily verifiable as related to the plant closure project. To assist in verifying costs, we could provide Staff with an opportunity to review invoices related to the plant closure project prior to recovery. We do not expect recovery through rates until after the costs are incurred and the project is complete. We are simply seeking to avoid the costs, in both time and money, of regulatory lag and rate relief, and to eliminate the risk of being second-guessed.

V. REBUTTAL TO RUCO

Q. HAVE YOU REVIEWED THE DIRECT FILING MADE BY RUCO?

A. I have read Mr. Moore's testimony, and I am familiar with the critical components of Mr. Rigsby's direct testimony. Specifically, I am aware that RUCO is recommending a hypothetical capital structure of 60 percent common equity at a cost of 8.22 percent and 40 percent debt at a cost of 6.26 percent.

Q. HOW DOES BMSC RESPOND TO RUCO'S COST OF CAPITAL RECOMMENDATIONS?

A. Mr. Bourassa will address Mr. Rigsby's testimony from the ratemaking and cost of capital perspective. From an operations and investment perspective, RUCO's recommendation is very disconcerting.

Q. WHY IS THAT MR. SORENSEN?

A. Well, for starters, Mr. Rigsby is recommending a hypothetical capital structure, the same thing the Commission specifically concluded was "results-oriented" for this Company in the last rate case.[6] This is even more troubling as BMSC actually has

[6] Decision No. 69164 at 20.

debt, authorized by the Commission, on its books. This debt is at 9.4%, which is much higher than his recommended cost of equity and cost of debt in this case. The debt on the Company's books is given different treatment for ratemaking purposes, consistent with prior Commission orders, but the debt does exist in the Company's actual capital structure, and the risk associated with that debt is indistinguishable from debt that is treated as supporting plant in rate base. Mr. Rigsby seems to ignore that fact.

Additionally, and most importantly, from an investment perspective, the adoption of the low rates recommended by Mr. Rigsby and the use of hypothetical capital structures like his strongly discourage continued investment in the State of Arizona. Simply put, an 8.22% ROE will not attract investment into BMSC or any other utility in this State. When this anemic ROE is coupled with the hypothetical capital structure, the Company's investors would essentially be granted the opportunity to earn a 7.43% return on their invested capital.[7] And, that is without factoring in the interest synchronization – a.k.a., RUCO's fictitious income tax deduction which would be inflicted upon the Company and prevent any opportunity to earn that 7.43% return. In general, an investor will choose to invest their money where risk is lower and returns are higher. Of course, there is a balance, but Mr. Rigsby just does not seem to recognize that there are 49 other states in which investors can invest their money in water and wastewater utilities, not to mention many other investment choices. A phantom opportunity to earn a 7.43% return would be wholly unacceptable to any rational investor in utilities.

[7] Bourassa COC Rb. at 4-5.

Q. MR. SORENSEN, ISN'T THAT WHAT ANY UTILITY WOULD CLAIM IN THE FACE OF A LOWER RECOMMENDED RETURN AS A SCARE TACTIC?

A. I can only testify as to Liberty Water and its affiliates in Arizona. I have to compete internally within the Liberty Water family of companies for capital, which is not unlimited. Liberty Water has utility investments in Texas. It is my understanding that in two recently filed cases in Texas, their regulatory body has had no issue with a requested 12% return on equity for utilities with 100% equity capital structures. Additionally, rates, whether interim or permanent, are usually implemented within 3 to 6 months after filing of the rate application. So, Liberty Water can invest in Texas utilities and receive a much greater return, more quickly, than can be received in Arizona. This is reality, not ratemaking theory. If Mr. Rigsby really wants to testify about investor expectations, he should start taking into account real world facts that are, in fact, making Arizona an unattractive state for investing capital in the utility industry. Others have recognized this problem, which makes it very difficult, if not impossible, to attract capital investment to the utilities I manage in the State of Arizona.[8]

Q. DO YOU HAVE ANYTHING TO SAY IN RESPONSE TO RUCO'S POSITIONS ON RATE BASE, REVENUES OR EXPENSES?

A. Again, Mr. Bourassa will address Mr. Moore's testimony on behalf of BMSC. However, I do want to briefly address Mr. Moore's testimony relating to non-recurring expense and wastewater treatment expense.

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[8] *See* November 7, 2008 Standard and Poor's Ratings Direct Report, "Assessing U.S. Regulatory Environments", rating Arizona as one of the 6 least credit supportive States in which to do business, attached as Sorensen RB Attachment 1. While that report was generated from the perspective of granting credit to utilities in the various 50 States, it would seem that one could draw a reasonable corollary from this report to equity investment, which has even more risk than debt.

Q. MR. MOORE TESTIFIED ON BEHALF OF RUCO THAT BMSC USED AN INCORRECT RATE FOR WASTEWATER TREATMENT EXPENSE. IS HE CORRECT?

A. Yes, he is, but unfortunately, Mr. Moore is also using an out of date number. The Company had originally used a base rate of $2.59 per thousand gallons, plus an environmental surcharge of 18.953% from the City of Scottsdale and City tax of 1.65% on the sum of those amounts. This was done to approximate the rate that would be in effect today. Mr. Moore used $2.53 per thousand gallons, plus the environmental surcharge and city tax, which was the rate in effect until June 30, 2009. Beginning July 1, 2009, the base rate increased to $2.61 per thousand gallons, plus the environmental surcharge of 18.953% or $.49 per thousand gallons, for a subtotal of $3.10 per thousand gallons, plus city tax of 1.65% of $.05 per thousand gallons, yielding a total rate of $3.15 per thousand gallons for treatment of sewage conveyed to the City of Scottsdale under our agreement.

Q. HOW DID THE COMPANY RECEIVE WORD OF THE COST INCREASE?

A. I received an email from a representative of the City confirming these rates. A copy of this email is being provided to the parties as part of our rebuttal work papers. Mr. Bourassa has made this adjustment in his rebuttal schedules.

Q. WHAT ADJUSTMENT DID MR. MOORE MAKE FOR NON-RECURRING EXPENSES?

A. As part of Mr. Moore's Operating Income Adjustment No. 5, he eliminated the cost of a clean-up that occurred during the test year. The cost he eliminated was $39,870 per his Schedule RLM-12. We certainly strive never to have a spill in our system, however, all systems have such incidents from time to time. Ms. Brown recognized this fact in her testimony and schedules by recommending that one-

third of the spill clean-up cost, or $13,290, be included in test-year operating expense.[9] I believe in this instance her position is a fair compromise and urge RUCO to adopt it to eliminate an issue in dispute.

VI. REBUTTAL TO STAFF

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONIES FILED BY COMMISSION STAFF IN THIS RATE CASE?

A. I have read the testimony by Ms. Brown and the Engineering Report by Ms. Hains. I am also familiar with the recommendations made by Mr. Manrique.

Q. STAFF RECOMMENDS A RETURN ON EQUITY OF 9.6 PERCENT. DO YOU BELIEVE THAT IS REASONABLE?

A. I will leave the detailed model and theory based testimony to Mr. Bourassa. Staff's ROE recommendation certainly moves closer to a reasonable solution than RUCO's recommended ROE of 8.22%, with an effective phantom rate of 7.44%, which won't attract capital. Still, I believe Staff's ROE is too low to attract capital to Arizona when other more profitable, less risky investments are readily available to our investors in other states. I also believe Staff's recommended 70 basis point financial risk adjustment is too high considering we do have debt on the Company's books, as I explained above in response to Mr. Rigsby's recommendations.

Q. THANK YOU, MR. SORENSEN. TURNING TO MS. HAINS' ENGINEERING REPORT, WERE YOU SURPRISED THAT STAFF RECOMMENDED DENIAL OF THE HOOK UP FEE?

A. Yes, and we immediately contacted Staff to discuss this issue with them. I understand from those discussions that Staff now supports the Company's

[9] Brown Dt. at Operating Adjustment No. 4, Schedule CSB-15.

proposed hook up fee tariff and will reflect this in its surrebuttal filing. If I am mistaken, I will address this issue further at the rejoinder stage of this matter.

Q. OKAY. ARE THERE ANY OTHER ASPECTS OF MS. HAINS' REPORT AND RECOMMENDATIONS THAT YOU WISH TO ADDRESS AT THIS TIME?

A. Yes. In her Staff Report, Section H, Tables 5 and 6, I found what I believe to be two separate math errors, which we hope Staff will correct. First, in Table 5, Ms. Hains recommended quarterly Cadmium samples at $15 each (4 per year), but the total in her table was $40, not $60 as is appropriate. Second, in Table 6, she recommended seven quarterly BOD samples, or 28 during the year, at the rate of $36 each. Her total cost for the year was $168, but the total should have been $1,008. The net impact of these two math errors would increase her recommendation for annual testing expense from $14,362 (included as Ms. Brown's Operating Income Adjustment No. 8), to $15,222. BMSC would accept this figure as adjusted test year testing expense, before any adjustment for known and measurable changes, which I will also discuss.

Q. PLEASE DO.

A. Since Staff's testimony was filed, we have been notified by the City of Scottsdale that our testing requirements will increase. This testing is now going to be required in addition to the testing we currently do at the wastewater treatment plant as the required sample point is different, and certain tests, like for Total Suspended Solids (TSS), will increase from that which we currently do for the City. These increased requirements will cost the Company an additional $13,360 in annual testing costs. The letter and cost calculation will be provided to the parties to this case as part of the workpapers. Meanwhile, we feel this cost increase is known and measurable, and hope it will increase Staff's Adjustment No. 8 to increase test year testing

expense by $11,627 ($15,222 + 13,360 - $16,955) above the testing cost of $16,955 as filed. This would eliminate an issue in dispute in this rate case.

Q. DO YOU HAVE ANY TESTIMONY TO PROVIDE IN RESPONSE TO MS. BROWN'S DIRECT TESTIMONY?

A. I do, although I note from the outset that Mr. Bourassa addresses the Company's response to the rate base and income statement adjustments recommended by Staff. For my part, I will provide additional testimony regarding Ms. Brown's adjustments to the truck lease, Operating Income Adjustment No. 7. In addition, I will address the additional $42,200 of labor expenses that RUCO included in its testimony related to RLM Operating Income Adjustment No. 5 which the Company will adopt and adjust for in its Rebuttal schedules.

Q. OKAY, PLEASE START WITH THE TRUCK LEASE?

A. Ms. Brown correctly states in her testimony that the truck lease in Operating Income Adjustment No. 7 was in fact signed by Gold Canyon Sewer Company ("GCSC"), an affiliate of BMSC. The reason for this was that GCSC had a master lease with the vendor and it was easier to add a truck under that existing agreement than to create a new one. However, the truck has been used exclusively for the business of BMSC. It is not shared with GCSC on a 50% basis as Ms. Brown indicates. The truck in question, a 2007 Chevy Silverado, was designated originally as truck #109 for internal purposes. Later, it was reassigned #156 (*see* the Environmental Health & Safety mapping in my workpapers for the internal number assignment change). As proof of the truck's assignment to BMSC, included in the workpapers are Vehicle Inspection reports from 2007 for truck #109, signed by Ryan Kennedy, the BMSC Supervisor during the time, which note that truck 109 is for BMSC. As further evidence of this truck being a BMSC truck, Environmental Health and Safety weekly reports from the test year, which note

truck 109 being a BMSC truck, are being provided in the workpapers. Finally, I am also providing as part of the workpapers the GE Fleet invoices for June 2008 through October 2009. These invoices demonstrate that truck 109/156 is in the Algonquin Water Resources of America fleet, and the assigned company for the vehicle is Black Mountain Sewer Company. This truck was, during and subsequent to the test year, a BMSC truck.

Q. AND THE LABOR EXPENSE ISSUE?

A. During the course of the Company responding to Staff data request CSB 10.5, it was discovered that the charges from a temporary labor/services company, Aerotek, for certain of their temporary operators, were mistakenly charged to LPSCO, an affiliate of BMSC, instead of to BMSC. The invoices and the contractor's timecards were provided to Staff and RUCO as part of our response. There were no further questions, so we believed that what we provided was sufficient proof. In his Direct Testimony, Mr. Moore recommended, as part of RUCO Operating Income Adjustment No. 5, that the $42,200 of Aerotek labor costs be included as costs of the Company incurred during the test year. The Company agrees with Mr. Moore's position. Ms. Brown did not address the issue in her Direct Testimony.

Then, in response to a Company data request, Ms. Brown responded that "[s]ince the invoices in question do not specify the utility wherein the contract employees worked and Algonquin Water has several utilities in Arizona, there is no evidence on the invoices to justify moving the expense from Litchfield Park to Black Mountain." I agree with Ms. Brown that on the invoice's surface, it was not possible to tell whether Santiago Parra and Bret Hurd, the Aerotek employees assigned to BMSC, were actually assigned to BMSC. However, their timesheets were all signed by Ryan Kennedy, the wastewater supervisor at BMSC and their

supervisor during their time working for the Algonquin family of companies. Had Ms. Brown made us aware of her concerns over the assignment of Mr. Parra and Mr. Hurd, we would have pointed out that fact. We also could have provided her (and I now include in my workpapers) with weekly Tail Gate Session (Safety Meeting) participation sheets for BMSC, signed by Ryan Kennedy and the Aerotek contractors in question for the periods they were assigned to BMSC (1/23/08 – 6/30/08 for Mr. Parra and 3/11/08 – 5/17-08 for Mr. Hurd), as well as various training session sign-in sheets. I believe this is more than sufficient evidence and hope with this clarification and additional information that Ms. Brown will join RUCO and the Company in adjusting operating expenses by this $42,200, as it was a necessary expense incurred for the provision of proper service, incurred during the test year. This would eliminate another issue in dispute.

Q. DOES THAT CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, although I wish to note that my silence on any issue does not necessarily signal the Company's agreement.

SORENSEN
RB ATTACHMENT 1

STANDARD &POOR'S

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November 7, 2008

Assessing U.S. Utility Regulatory Environments

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Assessing U.S. Utility Regulatory Environments

The assessment of regulatory risk is perhaps the most important factor in Standard & Poor's Ratings Services' analysis of a U.S. regulated, investor-owned utility's business risk. Each of the other four factors we examine--markets, operations, competitiveness, and management--can affect the quality of the regulation a utility experiences, but we believe the fundamental regulatory environment in the jurisdictions in which a utility operates often influences credit quality the most. In our credit analysis, we evaluate regulatory risk on a company-specific basis. A utility management's skill in managing regulatory risk can in many cases overcome a difficult regulatory environment. Conversely, other companies can experience greater regulatory risk even with supportive regulatory regimes if management fails to devote the necessary time and resources to the important task of managing regulatory risk. Operating in a state with a regulatory structure that is conducive to maintaining credit quality will improve the chances for a utility to successfully negotiate the regulatory maze.

This commentary discusses our views on what constitutes a favorable regulatory climate. We then use those factors to create assessments of the regulatory environments in states that regulate the electric and gas utilities that we rate. (See the table at the end of this article.) Our intention is to provide a common base for our own analysis of regulatory risk and to better communicate to investors, issuers, and regulators how various elements of regulation can affect credit quality. The exercise is also expected to enhance our ability to evaluate management by highlighting instances where our opinion of a company's regulatory risk diverges significantly from the fundamental quality of the regulatory jurisdictions where it operates.

The assessments of relevant jurisdictions are based on quantitative and qualitative factors. Importantly, we make our assessments from a credit perspective. We plan to update them annually or when significant events occur that have an important impact on the regulatory climate in a particular jurisdiction. The new regulatory assessment information augments the methodology applied to regulated utilities today.

Our introduction of these regulatory assessments coincides with what we view as the increasing influence of regulatory matters on the rated utilities' risk profiles and greater credit market awareness of the importance of understanding the regulatory process. Our goal in explaining our views on regulatory practices and policies and their effect on Standard & Poor's analysis of the credit quality of utilities is to provide additional transparency to the market.

Background

State utility regulation is almost as old as credit ratings. Standard & Poor's predecessor, Standard Statistics Bureau, was formed in 1906, and the first state utility commissions, as we know them today, appeared in 1907. Regulation has always been a factor in Standard & Poor's analysis of utility ratings, but its importance to our analysis has shifted with industry trends over time.

Before the 1970s, regulators presided for the most part over stable or decreasing rates as economic growth, rising consumption, and economies of scale drove costs down. The advent of inflation, rising and volatile fuel costs, and nuclear power missteps led to higher rates and, in our view, greater regulatory influence on credit quality during the 1980s. Restructuring in the natural gas and then the electric industries marked the 1990s and the first years of the new millennium, and the importance of regulatory issues in our analysis again started to subside. In our view, we are

now in another era of increasing and unstable costs and some semblance of a return to traditional utility regulation. Consequently, the quality of regulation is at the forefront of our analysis of utility creditworthiness.

We have historically focused on regulatory risk on a company-specific basis. Nothing in what follows will change that approach. Utility commissions regulate diverse industries and adopt different approaches to different types of businesses. Treatment of utilities within the same industry can vary significantly in the same jurisdiction. The quality of the regulation experienced by a company is often the product of the company's management and business strategy as much as its regulators. The regulatory climate assessments only serve as a baseline of our opinion on the fundamental attitude of a jurisdiction toward the credit quality of the utilities in that state, and they are the starting point for Standard & Poor's analysis of the regulatory risk of each rated utility. Our goal is to achieve greater consistency and continuity in utility ratings.

Assessing Regulatory Jurisdictions

We assess jurisdictions on one basic attribute--the fundamental approach to controlling utility rates--and then in three major categories. The resulting assessments are based primarily on various measures of regulatory risk that are discussed briefly below. With respect to qualitative factors, we look for long-term, historical characteristics of the jurisdiction, as well as transient regulatory and political developments.

The foundation of our opinion of the regulation in a jurisdiction is the degree to which competitive market forces are allowed to influence rates. In order of credit-friendliness, a state will rely either on full cost-based regulation for all components of the utility bill, market-based mechanisms for generation, and (more rarely) retail markets, or a hybrid of the two to control the amount charged and the terms on which that service is offered. It may surprise some to learn that we consider a hybrid setup, which in most cases exists because the transition to some sort of competition has stalled, to harbor more risk for bondholders than a system that is committed to letting market prices set a major part of the customer's bill.

The risk inherent in the market-based model is straightforward: the price for electricity can be more volatile when based on a market than when it is based on embedded costs, and regulators are apt to resist full and timely recovery when changes in generation costs are abrupt and substantial (and perhaps misunderstood). The risks in a hybrid or transitional model are less apparent, but, in our opinion, potentially more significant. First, we consider the uncertainty of the timing of reaching the end state--and what that end state will look like--to be a negative factor from a credit perspective. Second, in some cases, the hybrid model may result in a "lower-of-cost-or-market" approach that allows generation rates to reflect one or the other at different times depending on which one suits ratepayers best. A utility and its bondholders may then face a prolonged period of potential exposure to market risk (the downside) with little or no opportunity to participate in the benefits of competition (the upside of greater returns).

After identifying the fundamental regulatory paradigm, our analysis turns to factors that influence the utility's business risk climate in the jurisdiction. The factors fall into three broad categories: ratemaking, political environment, and financial stability. Broadly speaking, the ratemaking and financial stability factors influence our assessments more than the paradigm and political factors.

Ratemaking Practices And Procedures

The main, and often the most contentious, task of a regulator is to set the rates a utility may charge its customers. We analyze specific rate decisions as part of the surveillance of each utility. Our regulatory assessments focus on the jurisdiction's overall approach to setting rates and the process it uses to conduct and manage base rate filings. Practices pertaining to separate tariff clauses for large expense items are examined in the third category of the analysis (see below). In this part of the assessment, we concentrate on whether established base rates fairly reflect the cost structure of a utility and allow management an opportunity to earn a compensatory return that provides bondholders with a financial cushion that promotes credit quality.

Notably, the analysis does not revolve around "authorized" returns, but rather on actual earned returns. We note the many examples of utilities with healthy authorized returns that, we believe, have no meaningful expectation of actually earning that return because of rate case lag, expense disallowances, etc. Although, in general, the absolute level of financial returns is less important to our analysis than how that return is earned, we recognize that, all else being equal, higher earned returns translate into better credit metrics and a more comfortable equity cushion for bondholders. A regulatory approach that allows utilities the opportunity to consistently earn a reasonable return is a positive factor in our view of credit quality.

The rates of return and capital structures used to generate the revenue requirement in rate proceedings may not be the primary focus of the assessment, but those and other decisions made in the ratemaking process are still noted. We consider those decisions to be potential signals from regulators on their attitude toward credit quality. We believe that the capital structure in particular is a handy and direct indication from the regulator as to whether or not creditworthiness is an important consideration in its deliberations when setting rates. Obviously, any pronouncements from a regulator that explicitly address credit ratings or ratemaking practices that incorporate credit-minded adjustments (e.g., the use of double-leveraged capital structures or off-balance-sheet debt-like obligations) are considered in the Standard & Poor's assessment.

We analyze the issue of "regulatory lag" in a comprehensive manner and not just as a matter of the efficiency of the regulator in completing rate cases. As part of this analysis, we evaluate the timeliness of rate decisions, coupled with an evaluation of the test year. In addition, we take into account the timing of interim rates, and other practices that affect the appropriateness of rates periodically established by the regulator. We do not view the issue of regulatory lag as an intermittent concern, consequential only during times of acute inflation or rising capital spending, but as a consistent part of our credit analysis. Accordingly, in our regulatory assessments we focus on whether the regulator efficiently prosecutes rate requests and bases its decisions with respect to rate setting on the most current information.

In our view, the prevalence of rate case settlements is not necessarily an important credit consideration. Although the common assumption among market participants seems to be that a settlement must be in the best interest of a utility, we believe this assumption disregards the possibility that management will sometimes make decisions based on its effect on earnings at the expense of cash flow considerations. This does not mean we dismiss the ability of stipulations to reach a fair resolution of difficult matters that help regulators issue timely and constructive rate decisions. It just means that frequent settlements do not, in our view, directly lead to a conclusion that the regulatory environment in a state enhances credit quality.

An important policy-related issue outside of individual rate cases that falls under this part of the assessment is the

regulatory oversight of large capital projects with long lead times that carry out-sized risks to a utility and its bondholders. In our opinion, practices such as legislative or regulatory recognition of the need for pre-approval of such endeavors, periodic reviews that substantively involve the regulator in the progress of the project, and rolling prudence determinations during construction can reduce the general level of risk associated with a utility committing substantial capital well in advance of the rate proceeding that results in the project being placed into rate base. Before committing to such projects, a resource-procurement process that uses objective guidelines to evaluate competing proposals to meet load obligations and keeps the regulator informed and involved in the decisions can, in our view, help to reduce the risk of subsequent disallowances. If the jurisdiction has an Integrated Resource Plan or similar mechanism that includes the participation of many parties and is used to definitively establish the need for new generation, we consider credit risk to be further diminished.

One more factor that we examine in this part of the analysis is whether a jurisdiction employs nontraditional ratemaking practices. Examples of what we may view to be potentially credit-enhancing regulatory mechanisms include weather normalization and incentive ratemaking. We believe that the beneficial effect on credit quality of a tariff clause that smooths out cash flows that can vary with outside influences like weather is self evident. The benefits of incentives incorporated into the regulatory regime may be less clear. Well-designed incentives can be at least credit neutral. A moderate amount of incentives can be credit supportive. We generally view incentive provisions (whether tied to cost control, reliability, or operational performance) as being beneficial for credit quality if they are linked to fair and objective benchmarks. Incentives that lack some or all of those features, such as a plain, long-term rate freeze, can be, in our opinion, detrimental to credit quality.

Political Insulation

The role of politics in utility regulation is often misunderstood. In most jurisdictions, legislatures created regulatory commissions and invested them with the power to set and enforce utility rates and service standards. Regardless of how a regulatory commission is statutorily organized, its function is to set and regulate rates and service standards with due regard not only for the interests of those who advance the capital needed to provide safe and reliable utility service but for other constituents as well. In this regard, bondholders should recognize that the setting of utility rates invariably reflects political as well as economic factors. Therefore, the potential for political considerations to affect utility regulation can be a key determinant when we assess a regulatory jurisdiction.

A primary factor in this part of our assessment is the method of selecting utility commissioners. In some jurisdictions, the governors appoint regulatory commissioners. In others, the same voters who pay utility bills directly elect commissioners. The regulatory risk associated with that model can sometimes be managed, but there is an inherent level of risk in elected regulatory bodies that we reflect in the assessment. Standard & Poor's also analyzes the track record of the involvement of the executive branch or the legislature in utility matters, and the relative visibility of utility issues in the political arena.

The ability of a regulator to deliver sound, fair, and timely rate decisions and set prudent regulatory policies that assist utility managers in managing business and financial risk can be affected by the overall atmosphere that it operates in. The tone can be set by the governor or legislature, the history and tradition of independence accorded to the regulatory body, and the behavior of important constituent groups that intervene in utility proceedings.

Cash Flow Support And Stability

The final set of factors in our assessment of regulatory environments is arguably the most important. The phrase "cash is king" can be overused, but it does highlight an essential part of the credit analysis. A regulatory jurisdiction that recognizes the significance of cash flow in its decision making is one that will appeal to bondholders. Generating cash is a function of the actions of utility management, but the regulator can supply (or withhold) the tools that can affect the company's essential ability to actually realize the intended level of cash flow.

The most prominent factor in this part of the analysis is the application of separate tariff provisions for major expenses such as fuel and purchased power. The timely adjustment of rates in response to changing commodity prices and other expenses that are largely out of the control of utility management is a key component of a credit-enhancing regulatory jurisdiction. We analyze the quality of special tariff mechanisms to determine their effectiveness in producing the cash flow stability they are designed to achieve. The frequency of rate adjustments, the ability to quickly react to unusual market volatility, and the control of opportunities to engage in hindsight disallowances of costs could affect the analysis almost as much as whether the tariff provisions exist at all. The record of disallowances plays a part in the regulatory assessment.

The commission's policies and oversight covering hedging activities may also be a factor in this part of the review if a utility has sought regulatory approval. For utilities that attempt to manage commodity risks, we look for a clearly-stated hedging policy and a track record of activity that conforms to that policy. The responsibility for communicating the policy and demonstrating the prudence of the hedging activity rests with the utility, but the initial response to a hedging program and the history of the regulator's treatment of the results of the program could influence our assessment.

Regulators can employ other ratemaking techniques that promote stable cash flows. We consider a commission's decisions on rate design in assessing its attitude on credit quality. For example, we take into account the relative size of the typical monthly customer charge, a decoupling mechanism that severs the direct relationship between revenues and customer usage, or other rate design features that bolster credit quality.

Especially during upswings in the capital expenditure cycle, such as we are experiencing now, a jurisdiction's willingness to support large capital projects with cash during the construction phase is an important aspect of our analysis. This is especially true for ventures with big budgets and long lead times, such as baseload coal-fired or nuclear power plants and high-voltage transmission lines that are susceptible to construction delays. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were considered extraordinary measures for use in unusual circumstances, but in today's environment of rising construction costs and possible inflationary pressures, cash flow support could be crucial in maintaining credit quality through the spending program.

Jurisdictional Assessments

The table below shows Standard & Poor's assessments of regulatory jurisdictions. The category titles are designed to communicate one other important point regarding utility regulation and its effect on ratings. All categories are denoted as "credit-supportive". To one degree or another, all U.S. utility regulation sustains credit quality when compared with the rest of corporate ratings at Standard & Poor's. The presence of regulators, no matter where in

the spectrum of our assessments, reduces business risk and generally supports all U.S. utility ratings.

Regulatory Jurisdictions For Utilities Among U.S. States

Most credit supportive	More credit supportive	Credit supportive	Less credit supportive	Least credit supportive
	Alabama	Arkansas	Louisiana	Arizona
	California	Colorado	Maine	Delaware
	Florida	Connecticut	Missouri	Dist. of Columbia
	Georgia	Hawaii	Montana	Illinois
	Indiana	Idaho	New York	Maryland
	Iowa	Kansas	Oklahoma	New Mexico
	South Carolina	Kentucky	Rhode Island	
	Wisconsin	Massachusetts	Texas	
		Michigan	Utah	
		Minnesota	Vermont	
		Mississippi	Washington	
		Nevada	West Virginia	
		New Hampshire	Wyoming	
		New Jersey		
		North Carolina		
		North Dakota		
		Ohio		
		Oregon		
		Pennsylvania		
		South Dakota		
		Virginia		

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BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF BLACK MOUNTAIN SEWER CORPORATION, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO: SW-02361A-08-0609

REBUTTAL TESTIMONY OF

THOMAS J. BOURASSA

(Rate Base, Income Statement And Rate Design)

October 20, 2009

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I. INTRODUCTION AND PURPOSE OF TESTIMONY.

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Thomas J. Bourassa. My business address is 139 W. Wood Drive, Phoenix, Arizona 85029.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. On behalf of the applicant, Black Mountain Sewer Corporation ("BMSC" or the "Company").

Q. HAVE YOU PREVIOUSLY SUBMITTED DIRECT TESTIMONY IN THE INSTANT CASE?

A. Yes, my direct testimony was submitted in support of the initial application in this docket. There were two volumes, one addressing rate base, income statement and rate design, and the other addressing cost of capital.

Q. WHAT IS THE PURPOSE OF THIS REBUTTAL TESTIMONY?

A. I will provide rebuttal testimony in response to the direct filings by Staff and RUCO. More specifically, this first volume of my rebuttal testimony relates to rate base, income statement and rate design for BMSC. I will also address the testimony by the Boulders Home Owners Association ("BHOA") in the rate design section of this volume of my rebuttal testimony. In a second, separate volume of my testimony, I will also present an update to the Company's requested cost of capital as well as provide responses to Staff and RUCO on the cost of capital and rate of return applied to the fair value rate base, and the determination of operating income.

II. SUMMARY OF BMSC'S REBUTTAL POSITION.

Q. WHAT IS THE REVENUE INCREASE THAT THE COMPANY IS PROPOSING IN THIS REBUTTAL TESTIMONY?

A. The Company is proposing a total revenue requirement of $2,541,508, which constitutes an increase in revenues of $961,338, or 60.84% over adjusted test year revenues.

Q. HOW DOES THIS COMPARE WITH THE COMPANY'S DIRECT FILING?

A. In the direct filing, the Company requested a total revenue requirement of $2,493,932, which required an increase in revenues of $913,762, or 57.83%.

Q. WHY IS THE REQUESTED REVENUE INCREASE HIGHER IN BMSC'S REBUTTAL FILING?

A. In its rebuttal filing, BMSC has adopted a number of adjustments recommended by Staff and/or RUCO, as well as proposed a number of adjustments of its own based on known and measurable changes to the test year. The net result of these adjustments is: (1) the Company's proposed operating expenses have increased by $44,936, from $1,664,665 in the direct filing to $1,709,590; and a net decrease of $6,596 in rate base from the direct filing of $3,723,645 to $3,317,649.

Q. PLEASE SUMMARIZE THE REASON FOR THE DECREASE IN RATE BASE?

A. The Company has proposed a number of rebuttal adjustments to rate base which has resulted in a net decrease in rate base. Included among these proposed adjustments are an adjustment to increase plant-in-service ("PIS") for unrecorded plant; an adjustment to increase advances-in-aid of construction ("AIAC") associated with the unrecorded plant; an adjustment to increase plant-in-service for plant transferred from an affiliate, Litchfield Park Service Company ("LPSCO"), and an adjustment to reflect a plant retirement that was not recorded at the end of the test year. The net increase to PIS is $288,809 and the net increase to AIAC is $254,251. The net rate base impact of these two adjustments is $34,558.

In addition to the above mentioned adjustments, the Company is proposing an adjustment to accumulated depreciation for the PIS adjustments it recommends. The Company has also corrected an error in its accumulated depreciation computation, which correction is reflected in its proposed accumulated depreciation adjustment. The net adjustment to accumulated depreciation is $97,641. The net rate base impact is ($97,641).

The Company is also proposing an increase to the Company's deferred income taxes ("DIT") of $24,344 based on its proposed adjustments to PIS and accumulated depreciation. Finally, the Company is proposing an adjustment to working capital of $32,142. The net rate base impact on these two adjustments is $52,556. Combined, the Company rebuttal proposed adjustments reduce rate base by $6,596 ($34,558 minus $97,641 plus $54,556).

Q. WHAT ARE THE PROPOSED REVENUE REQUIREMENTS AND RATE INCREASES FOR THE COMPANY, STAFF, AND RUCO AT THIS STAGE OF THE PROCEEDING?

A. The proposed revenue requirements and proposed rate increases are as follows:

	Revenue Requirement	Revenue Incr.	% Increase
Company-Direct	$2,493,932	$ 913,762	57.83%
Staff	$2,063,310	$ 483,140	30.58%
RUCO	$2,069,774	$ 489,604	30.98%
Company Rebuttal	$2,541,508	$ 961,338	60.84%

III. RATE BASE

Q. WOULD YOU PLEASE IDENTIFY THE PARTIES' RESPECTIVE RATE BASE RECOMMENDATIONS?

A. Yes, the rate bases proposed by the parties proposing rate base in the case, the Company, Staff and RUCO, are as follows:

	OCRB	FVRB
Company-Direct	$ 3,723,245	$ 3,723,245
Staff	$ 3,602,336	$ 3,602,336
RUCO	$ 3,745,364	$ 3,745,364
Company Rebuttal	$ 3,716,649	$ 3,716,649

Although there are three other parties, none of them has made any proposals regarding rate base, revenues or expenses.

A. Plant-in-service.

Q. WOULD YOU PLEASE DISCUSS THE COMPANY'S PROPOSED ORIGINAL COST RATE BASE, AND IDENTIFY ANY ADJUSTMENTS YOU HAVE ACCEPTED FROM STAFF AND/OR RUCO?

A. The Company's rebuttal rate base adjustments to OCRB are detailed on rebuttal schedules B-2, pages 3 through 6. Rebuttal Schedule B-2, pages 1 and 2, summarize the Company's proposed adjustments and the rebuttal OCRB.

Rebuttal B-2 adjustment 1, as summarized on Rebuttal Schedule B-2, page 2, consists of three adjustments labeled as "A", "B", "C" and "D" on Rebuttal Schedule B-2, page 3.

Adjustment A reflects an increase to PIS for unrecorded plant totaling $254,251. This plant is for the New Trade Lift Station project. Both Staff and RUCO have made similar adjustments, although both Staff and RUCO increased PIS by $276,985.[1]

[1] *See* Moore Dt. at 8; Brown Dt. at 8-9.

Q. WHY ARE STAFF AND RUCO'S PIS ADJUSTMENTS FOR THE NEW TRADE LIFT STATION HIGHER THAN THE COMPANY'S ADJUSTMENT?

A. The Company had previously provided cost estimates to Staff and RUCO in a data request. However, since that time, the Company has received and tabulated invoices totaling $254,251. As this is now a known and measurable cost, it is likely Staff and RUCO will revise their adjustments, thus eliminating this as an issue in dispute.

Q. PLEASE CONTINUE.

A. Adjustment B, of rebuttal B-2 adjustment 1, reflects a decrease to PIS of $13,208 for a plant retirement. The retirement is for the Old Trade Center Lift Station. Both Staff and RUCO propose the same adjustment to PIS.[2]

Adjustment C, of rebuttal B-2 adjustment 1, reflects an increase to PIS of $9,141 for capitalized expenses. This adjustment reflects an adoption of Staff's proposed PIS adjustment for $9,141.[3] RUCO has not proposed an adjustment to PIS for capitalized expenses.

Adjustment D, of rebuttal B-2 adjustment 1, reflects an increase to PIS of $38,625 for an odor control unit transferred from LPSCO. RUCO proposes this adjustment.[4] However, Staff does not propose this adjustment.

Q. IS THIS THE ODOR CONTROL UNIT IN SERVICE?

A. Yes, and it has been since June 27, 2008.

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[2] Moore Dt. at 8; Brown Dt. at 8-9.

[3] Brown Dt. at 10.

[4] Moore Dt. at 9.

B. Accumulated Depreciation.

Q. PLEASE EXPLAIN YOUR ADJUSTMENTS TO ACCUMULATED DEPRECIATION.

A. Rebuttal B-2 adjustment 2, as summarized on Rebuttal Schedule B-2, page 2, consists of three adjustments labeled as "A", "B", "C" and "D" on Rebuttal Schedule B-2, page 4.

Adjustment A reflects an increase to accumulated depreciation for unrecorded plant totaling $4,233.

Adjustment B, of rebuttal B-2 adjustment 2, reflects a decrease to accumulated depreciation of $13,208 for a plant retirement. The retirement is for the Old Trade Center Lift Station as discussed previously. The same amount has been removed from both PIS and accumulated depreciation, making this retirement a rate base neutral adjustment.

Adjustment C, of rebuttal B-2 adjustment 2, reflects an increase to accumulated depreciation of $280 for capitalized expenses. This adjustment reflects an adoption of Staff's proposed PIS adjustment for $9,141 for capitalized expenses as discussed previously.

Adjustment D, of rebuttal B-2 adjustment 2, reflects an increase to accumulated depreciation of $10,183[5] for prior year accumulated depreciation (from 2002 to December 2007) for an odor control unit transferred from LPSCO as discussed previously.

Adjustment E, of rebuttal B-2 adjustment 2, reflects an increase to accumulated depreciation of $97,641, primarily for the correction of an error in the

[5] There is additional depreciation totaling $965 for the odor control unit for the January through June 2008 period which is included in rebuttal B-2 adjustment E. The total accumulated depreciation through the end of June 2008 is $11,148.

Company's direct re-computation of accumulated depreciation from the end of the last test year to the end of the test year in the instant case. In direct, the prior authorized depreciation rates were assumed to have changed in December 2005. However, the date of the last decision (Decision No. 69164) was December 5, 2006. The prior depreciation rates should have been used until the date of the last decision. For purposes of my re-computation, I assume that plant was depreciated at the prior authorized depreciation rates for eleven months during 2006 and depreciated one month during 2006 at the depreciation rates approved in Decision No. 69164. Neither Staff nor RUCO discovered this error and have not proposed an adjustment for this error at this stage of the proceeding.

Q. WHEN DID YOU DISCOVER THIS ERROR?

A. During the preparation of my rebuttal testimony.

C. <u>Advances-in-aid of Construction ("AIAC").</u>

Q. PLEASE DISCUSS THE COMPANY'S ADJUSTMENT TO ADVANCES-IN-AID OF CONSTRUCTION?

A. The Company proposes an increase to AIAC of $254,251 to reflect the funding of the New Trade Center Lift Station. This adjustment corresponds to the proposed PIS adjustment of $254,251 for the New Trade Center Lift Station as I discussed previously. Both Staff and RUCO propose an increase to AIAC of $278,985, which corresponds to their respective proposed PIS adjustment for the New Trade Center Lift Station. As I discussed above, the difference in our numbers reflects use of estimates before and actual costs now.

D. Deferred Income Taxes ("DITs").

Q. HAS THE COMPANY PROPOSED A REBUTTAL ADJUSTMENT TO DEFERRED INCOME TAXES?

A. Yes. In rebuttal B-2 adjustment 3, as shown on Schedule B-2, page 2, the Company's deferred income tax asset is increased by $24,344. The increase reflects the Company's rebuttal proposed changes to PIS, accumulated depreciation, and AIAC. The details of the Company's rebuttal proposed DIT adjustment is shown on Schedule B-2, page 6.

Q. HAVE STAFF OR RUCO PROPOSED CHANGES TO THE COMPANY'S DEFERRED INCOME TAXES?

A. No. Neither Staff nor RUCO propose changes to DIT based on their proposed adjustments to PIS, accumulated depreciation, and AIAC. And, neither Staff nor RUCO have explained why. It is necessary to reflect changes to DIT based on changes to PIS, accumulated depreciation, AIAC (and CIAC) in order to properly match rate base and revenues and expenses.

E. Working Capital.

Q. HOW DOES THE COMPANY REBUT STAFF'S RECOMMENDED WORKING CAPITAL?

A. The Company rebuts Staff's recommendation by recommending a working capital allowance based on an adequate lead-lag study that I had to prepare to rebut Staff's recommendation of a negative working capital allowance.

Q. WHY DIDN'T YOU DO A LEAD-LAG STUDY IN THE DIRECT FILING?

A. Lead-lag studies are costly to prepare and often subject to dispute. I had hoped by showing the results of a formula method analysis and seeking no working capital allowance that any dispute on this issue could be avoided. That didn't happen, and as a result, in response to Staff's proposed rate base reduction of $127,713, the

Company asked me to prepare a lead-lag study for the determination of a cash working capital allowance component of working capital. Based on my lead-lag study for cash working capital and including materials and supplies and prepayments in my computation of a working capital allowance, the Company is proposing a working capital allowance of $32,142. The details of the working capital allowance computation are shown on Schedule B-5, page 1. The details of the cash working capital (lead-lag study) are shown on Schedule B-5, page 2.

Q. DID STAFF PREPARE A LEAD-LAG STUDY FOR BMSC?

A. No. Staff estimated leads and lags for BMSC using generalized estimates similar to the approach adopted by the Commission in the last rate case.[6] However, even if one accepts the cash working capital computation of a negative $127,713, Staff failed to include materials and supplies inventory and prepayments in its working capital allowance.[7] As a result of Staff's failure to include these other components of the working capital allowance, Staff's proposed working capital allowance is overstated by $17,326 and should be ($110,387), not ($127,713). But, Staff's computation as shown on Staff Schedule CSB-9 is really just the determination of a cash working capital component, and now that Staff has taken a position that necessitated BMSC preparing a lead-lag study, it should be utilized to determine working capital.

Q. DID RUCO PROPOSE WORKING CAPITAL?

A. No. RUCO proposes a zero working capital allowance consistent with the Company's initial position.

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[6] *See* Decision No. 69164 at 6-7; Brown Dt. at 11.

[7] Per R14-2-103, Appendix A, the working capital allowance (Schedule B-5) includes cash working capital, materials and supplies and prepayments.

F. **Miscellaneous.**

Q. DO THE PARTIES AGREE ON THE BALANCE OF CONTRIBUTIONS-IN-AID OF CONSTRUCTION AND ACCUMULATED AMORTIZATION IN RATE BASE?

A. Yes. Neither Staff nor RUCO propose an adjustment to contributions-in-aid of construction ("CIAC") or accumulated amortization of CIAC.

Q. DO THE PARTIES AGREE ON THE BALANCE OF DEFERRED REGULATORY ASSETS IN RATE BASE?

A. Yes. Again, the Company's proposed deferred regulatory asset consists of the amortized balance of the additional Scottsdale wastewater treatment capacity the Company purchased in 2006.[8]

IV. INCOME STATEMENT

Q. WOULD YOU PLEASE DISCUSS THE COMPANY'S PROPOSED REBUTTAL ADJUSTMENTS TO REVENUES AND EXPENSES AND IDENTIFY ANY ADJUSTMENTS YOU HAVE ACCEPTED FROM STAFF AND/OR RUCO?

A. The Company's proposed rebuttal adjustments are detailed on Rebuttal Schedule C-2, pages 1-20. The rebuttal income statement with adjustments is summarized on Rebuttal Schedule C-1, page 1-2.

Rebuttal adjustment 1 increases depreciation expense. Depreciation expense is higher due to the impacts of the Company proposed rebuttal adjustments to plant-in-service.

Rebuttal adjustment number 2 increases property tax expense and reflects the rebuttal proposed revenues. All the parties are in agreement on the method of

[8] *See* Bourassa Dt. at 7-8.

computing property taxes, but each computes the property taxes based on their proposed revenues. I did that, and then used the property tax rate and assessment ratio that was used in the direct filing.

Q. ARE THERE DIFFERENCES IN THE PROPOSED TAX ASSESSMENT RATIO USED IN THE COMPUTATION OF PROPERTY TAXES?

A. Yes. While the Company and RUCO propose an assessment ratio of 21 percent, Staff proposes an assessment ratio of 23 percent.[9] All other things being equal, a higher assessment ratio results in higher property taxes.

Q. HAS STAFF EXPLAINED WHY IT USES THE HIGHER ASSESSMENT RATIO?

A. No, but Staff is using the 2008 assessment ratio, while the Company proposed a 21 percent rate - the assessment ratio for 2010. Since this is the time new rates will be in effect, and it is known and measurable, I maintain this is the appropriate assessment ratio to use in this case.[10]

Q. PLEASE CONTINUE WITH YOUR DISCUSSION OF THE INCOME STATEMENT?

A. Rebuttal adjustment number 3 removes capitalized expenses from Contractual Services and Contractual Services – Other. The adjustment reflects the Company's acceptance of Staff's proposed adjustment for capitalized expenses.[11] RUCO does not propose an adjustment for capitalized expenses.

Rebuttal adjustment number 4 increases purchased wastewater treatment expense based on the most current City of Scottsdale treatment rate of $2.61 per 1,000 gallons (excluding environmental fees and sales tax). RUCO proposes a

[9] *See* RUCO Schedule RLM-9 and Staff Schedule CSB-23.

[10] Bourassa Dt. at 10.

[11] Brown Dt. at 19.

downward adjustment to purchased wastewater treatment expense.[12] However, RUCO's downward adjustment is based on an incorrect rate of $2.53 per 1,000 gallons (excluding environmental fees and sales taxes). Staff appears to have accepted the Company's purchased wastewater treatment expense adjustment from its direct filing using a rate of $2.59 per 1,000 gallons (excluding environmental fees and sales taxes).

Q. IS THE RATE OF $2.61 PER 1,000 GALLONS A KNOWN AND MEASURABLE CHANGE?

A. Yes. Mr. Sorensen discusses the most current rate from the City of Scottsdale in his rebuttal testimony.[13]

Q. PLEASE CONTINUE.

A. Rebuttal adjustment 5 annualizes purchased wastewater treatment expense based on the current rate from the City of Scottsdale, as discussed previously. The annualization of purchased wastewater expense is intended to match the Company's revenue annualization adjustment that was proposed in the Company direct filing.

Q. DID RUCO PROPOSE AN ANNUALIZATION ADJUSTMENT USING ITS PROPOSED RATE OF $2.53 PER 1,000 GALLONS?

A. Yes, so other than the number, we should be in agreement. Then, hopefully, Staff and RUCO will recognize that Scottsdale has made a change, and the change is both known and measurable and beyond BMSC's control, and they will adjust their schedules accordingly, eliminating an issue from dispute.

[12] Moore Dt. at 12.

[13] Sorensen Rb. at 11-12.

Q. PLEASE CONTINUE.

A. Rebuttal adjustment 6 increases chemicals expense for a known and measurable change to the cost of chemicals. This adjustment is similar to the adjustment RUCO proposes, except the Company computes an amount of $3,191 while RUCO computes an amount of $3,185. Staff does not propose an adjustment to chemicals expense.

Rebuttal adjustment 7 annualizes chemicals expense for a known and measurable change to the cost of chemicals. The annualization of chemicals expense is intended to match the Company's revenue annualization adjustment that was proposed in the Company direct filing.[14] RUCO does not propose an annualization adjustment for chemicals expense as it did with purchased wastewater treatment.

Rebuttal adjustment 8 increases testing expense reflecting known and measurable changes to this expense. As explained by Mr. Sorensen in his rebuttal testimony, the City of Scottsdale is requiring additional testing in order to comply with its requirements to accept wastewater for treatment.[15] The Company proposed level of testing expense reflects the Staff proposed level plus the incremental costs of complying with the City of Scottsdale requirements.

Rebuttal adjustment 9 increases rent expense to reflect a full 12 months of rental costs for its operation office in Carefree. The Company adjustment matches RUCO's proposed adjustment of $18,432.[16] Staff proposes a similar adjustment totaling $17,034.[17] However, Staff's adjustment is flawed in that it eliminates the

[14] Bourassa Dt. at 14.

[15] Sorensen Rb. at 14.

[16] Moore Dt. at 14.

[17] Brown Dt. at 21.

rental costs of storage space. Staff's proposed level of rental expense is understated by $1,328.

Rebuttal adjustment 10 reflects the adoption of Staff's normalization of Contractual Services (legal and engineering) and Contractual Services – Other, contained in Staff's operating income adjustment number 4 on Staff Schedule CSB-15. However, the Company has identified an error in Staff's computation and my proposed normalization reflects the correction.

Q. PLEASE EXPLAIN.

A. First, Staff normalizes Contractual Services – Other by dividing clean up costs of $39,870 by 3 for an annual cost of $13,290.[18] The Company does not disagree with this approach for normalizing these costs under the circumstances, nor does it disagree with the amount computed.[19]

Q. DOES RUCO NORMALIZE THE CLEAN UP COSTS?

A. No. RUCO recommends removal of all the clean up costs. But it is unrealistic to assume that the Company will not incur similar costs in the future. Wastewater utilities work diligently to avoid events that require clean up costs, and BMSC is no exception. However, all wastewater systems have spill or overflow events from time to time that require clean up. Therefore, the costs are a normal and recurring expense for wastewater utilities and it is appropriate to include some level of expense for sewer spills in the cost of service.

Q. PLEASE CONTINUE.

A. Second, for Contractual Services (legal and engineering), Staff computes an historical 3 year average and then reduces the test year expense down to the

[18] *See* Staff Schedule CSB-15, lines 1-16.

[19] Sorensen Rb. at 12.

historical average expense.[20] However, when computing the downward adjustment to bring the test year expense down to the 3 year average expense level, Staff fails to first remove capitalized expenses that Staff proposes in another Staff adjustment and overstates its adjustment by $1,500 as a result.

Q. PLEASE EXPLAIN.

A. Staff computes a three year historical average of $6,001 on lines 23 through 28 using the actual expense for the years ended June 30, 2006 of $5,503 and June 30, 2007 of $4,639, as well as an adjusted test year expense for the year ended June 30, 2008 of $7,862 ($9,362 actual test year expense less $1,500 of Staff proposed capitalized expenses). Yet, when computing the downward adjustment on lines 30 through 32, Staff uses the actual test year level of expense of $9,362. Staff should have used the adjusted expense level of $7,862 on line 31 instead of $9,362. By using the adjusted test year expense of $7,362, Staff would have computed an adjustment of $1,861 rather than $3,361 as shown. The $1,500 difference is the $1,500 Staff already proposes to remove through its capitalized expense adjustment as discussed previously.

Q. DO YOU AGREE WITH AVERAGING AS A MEANS OF NORMALIZING AN EXPENSE?

A. No. In general, I believe this normalization approach should be avoided. Surrounding facts and circumstances may justify their use, but substantial evidence must justify a deviation from the test year. Here, in the interest of eliminating issues between the parties, the Company has agreed to accept Staff's adjustment to Contractual Services, with a correction as noted previously above.

[20] *See* Staff Schedule CSB-15, lines 20 through 32.

Q. PLEASE CONTINUE.

A. Rebuttal adjustment 11 reflects Staff's proposed adjustment to decrease bad debt expense by $4,067 for write-offs related to prior year revenue (2006 and 2007), and BMSC's proposal to increase bad debt expense by $6,479 for additional write-offs related to test year revenues that occurred after the end of the test year.

Staff determined that "since this expense was not within the test year, Staff removed it".[21] Obviously, the expense was recorded in the test year and included in test year expense. Arguably, it is related to prior year revenues. This shouldn't matter, but if we are to follow Staff's logic that only bad debt expense relating to test year revenues should be reflected in bad debt expense for the test year, then it is appropriate to reflect the known and measurable write-offs in bad debt expense that are related to test year revenues which occurred after the end of the test year. The Company's adjustment increases bad debt expense by $2,412 ($6,479 minus $4,067).

Rebuttal adjustment 12 removes costs for meals, beverages, and charitable contributions and reflects adjustments for meals of $526, beverages of $907, and charitable contributions of $52 contained in Staff's adjustment number 9.[22] The Company does not agree to the removal of bonuses of $13,460 also contained in Staff's adjustment. Bonuses and incentives are a useful tool in promoting efficiencies in operations and in motivating employees. The ratepayer ultimately benefits from efficient operations, reduced cost of service, and better customer service. As long as the bonuses and incentive payments are reasonable, designed to help achieve operational efficiencies and cost reductions, improve customer service, and the total compensation (including bonuses) to the employee is within

[21] Brown Dt. at 20.

[22] *See* Staff Schedule CSB-20. *See also* Brown Dt. at 23.

the range of comparable compensation for positions with similar required experience, skill, educational requirements, and responsibility levels, the cost should be allowed.

Q. DOES RUCO PROPOSE REMOVAL OF MEALS, BEVERAGES, AND CHARITABLE CONTRIBUTIONS?

A. Yes. Contained within RUCO operating income adjustment number 5 on RUCO Schedule RLM-12 are adjustments for beverages of $908 and charitable contributions of $52.

Q. DOES RUCO PROPOSE THE REMOVAL OF BONUSES?

A. No.

Q. PLEASE CONTINUE.

A. Rebuttal adjustment 13 increases Contractual Services by $42,200 for costs related to work performed by Aerotek Environmental for BMSC that were incorrectly booked to LPSCO expense. RUCO makes a similar adjustment in its operating income adjustment number 5.[23]

Q. DOES STAFF RECOGNIZE THIS ADDITIONAL COST?

A. No. Mr. Sorensen discusses this issue in more detail in his rebuttal testimony.[24]

Q. PLEASE CONTINUE.

A. Rebuttal adjustment 14 reflects the agreement with both Staff and RUCO to remove a negative expense of $1,780 from test year expenses.[25]

[23] *See* RUCO Schedule RLM-12. *See also* Moore Dt. at 13.

[24] Sorensen Rb. at 15-16.

[25] *See* Staff Operating Income Adjustment 11 on Schedule CSB-22 and RUCO Operating Income Adjustment 7 on Schedule RLM-7.

Rebuttal adjustment 15 reflects an increase to the allocated affiliate central office cost by $1,490 to $33,778. The Company's adjustment is detailed on *Rebuttal Schedule C-2, page 16.*

Q. PLEASE EXPLAIN THE AFFILIATE CENTRAL OFFICE COST ALLOCATION AND THE COMPANY'S REBUTTAL ADJUSTMENT?

A. The rebuttal allocated affiliate central office cost is based on adjusted actual test year central office cost pool of $3,936,352 US dollars or "USD" which includes Staff's proposed reduction for disallowed costs of $182,693 USD ($191,828 shown on Staff Schedule CSB-12 divided by Canadian dollar to US dollar conversion factor). The central office cost pool is then allocated between the two operating groups of companies within the parent company (Algonquin Power Income Fund or APIF) – the Power Generation Infrastructure Group and the Utility Infrastructure Group. Based on the number of companies within each group relative to the total number of companies, the Utilities Infrastructure Group is allocated 26.98 percent or $1,062,190 USD of the central office cost pool. The Utilities Infrastructure Group cost pool is then allocated to each individual utility with the group based on the number of customers relative to the total number of customers for the group. For BMSC, the rate is 3.18 percent. The total central office costs included in BMSC's cost of service is $33,778 USD. This is approximately 0.086 percent (less than one tenth of one percent) of the adjusted total central office cost pool of $3,936,352.

Q. STAFF STATES THAT THE CENTRAL OFFICE COST POOL WAS $3.95 MILLION, BUT YOU ARE USING A FIGURE OF $4.25 MILLION IN YOUR CENTRAL OFFICE COST ALLOCATION SHOWN ON C-2, PAGE 16. PLEASE EXPLAIN.

A. The $3.95 million (Canadian dollars or CAD) was a budgeted cost for 2008 which Ms. Brown refers to on page 15 of her testimony. The Company provided the 2008 budget information in the Company Response to Staff data request MEM 4.1. During the course of this case, the Company provided to Staff invoices and other supporting documentation (Response to Staff Data Request JMM 9.1) totaling $4.235 million CAD - the actual incurred central office costs during the test year. It is the $4.235 million CAD that the Company is using as the starting basis for its rebuttal adjustment for allocated central office costs as shown on Rebuttal Schedule C-2, page 16.

Q. PLEASE COMMENT ON STAFF'S ADJUSTMENT FOR ALLOCATED CENTRAL OFFICE COSTS?

A. Staff is recommending an expense level of $1,452 based on an adjusted central office allocation pool of $113,224 and an allocation factor of 1.28 percent based on the number of companies in the APIF.[26] Staff's allocation method and analysis of the benefits to BMSC is flawed. Staff eliminates 97 percent of the central office cost allocation pool before allocating the remaining 3 percent to BMSC. However, APIF incurs the central office cost for the benefit of its subsidiary businesses. APIF provides management, audit, tax and legal resources for all of its subsidiary businesses that would otherwise be incurred if they were a stand-alone business. In other words, but for the subsidiary business, APIF would not have central office costs, nor would it need to provide these benefits to its subsidiaries, including BMSC, at a cost that reflects the economies of scale associated with this sort of shared service model.

[26] *See* Staff Schedule CSB-12.

For example, under the allocation method proposed by the Company, BMSC is allocated about $1,925 USD ($2,022 CAD divided by 1.05) for tax services (Federal and state income tax return preparation tax returns and tax advisory services). This is far below the comparable tax services fees which would be incurred by BMSC if it were to engage such services on a stand-alone basis. By way of comparison, for a company the size of BMSC, the tax services costs would be in the range of $5,000 to $10,000 annually. Under the APIF model, a savings of $3,000 to $8,000 annually is achieved for BMSC.

Q. WHAT DOES STAFF'S RECOMMENDATION PROVIDE FOR IN TERMS OF COST FOR TAX SERVICES?

A. $339.[27] This woefully understates the cost of such services. I couldn't go to H&R Block and have my personal tax returns prepared for that amount.

Q. ARE THERE OTHER EXAMPLES YOU CAN PROVIDE?

A. Yes. BMSC is allocated $7,688 USD ($8,072 CAD divided by 1.05) for audit services under the Company's allocation method. By way of comparison, an independent audit for a similarly sized company such as BMSC would be in the range of $20,000 to $30,000. Under the APIF model, a savings of $12,000 to $22,000 annually is achieved for BMSC.

Q. WHAT ARE THE BENEFITS OF AN AUDIT?

A. The benefits of an audit are numerous. Audits can improve a company's efficiency and profitability by helping the management to better understand their own working and financial systems. Audits insure the financial integrity of a company, and help to identify and investigate possible frauds or irregularities. Audits help an enterprise to develop effective and strong financial internal controls. Audits

[27] *See* Staff Schedule CSB-12, line 15, column K.

help recognize business strength and opportunities for improvement of efficiency and effectiveness in operations. Audits help to pinpoint deviations from management's standards and expectations, and verify compliance with laws and regulations. Auditors can gain a unique, broad perspective which they apply to deliver effective analyses and relevant information to the company. Management can then use this information to evaluate the company and implement measures necessary to meet their objectives. Ultimately, management, shareholders, suppliers and financers, and ratepayers are assured that the risks in the organization are well-studied, and effective systems are in place to handle them. Further, audits demonstrate to regulators that a company (in this instance, BMSC) has followed appropriate methods to record its affairs on its books, thus reducing the effort required by Staff and Intervenors to ensure that records are accurate.

Q. UNDER STAFF'S ALLOCATION, WHAT AMOUNT IS PROVIDED FOR AUDIT SERVICES?

A. $650.[28] This is less than four percent of the low end of the range of the cost of an audit engagement to BMSC and is unrealistic.

Q. WOULD THE COMPANY HAVE AN AUDIT PERFORMED IF IT WERE STAND ALONE?

A. If BMSC were able to afford audits I am sure it would. Clearly, audits provide a number of benefits to an organization. On the other hand, most small utilities do not have audits performed because they cannot afford the cost. In the instant case, BMSC is able to benefit by an audit because of the significant cost savings achieved by the APIF business model.

[28] *See* Staff Schedule CSB-12, line 14, column K.

Q. WHAT ARE OTHER EXAMPLES OF COSTS FOR SERVICES THAT ARE ALLOCATED TO BMSC THROUGH THE COMPANY PROPOSED ALLOCATION?

A. The Company is allocated a cost for Other Professional Services, Management Fees, Unit Holder Communications, and Trustee Fees. Professional Services primarily relate to maintenance on the APIF Enterprise Reporting System ("ERP"), payroll system, 401k services, and Health and Benefit services. BMSC benefits because it utilizes the ERP system for proper record keeping, and the payroll system to pay the operators and others who do work on BMSC's behalf. Under BMSC's proposed allocation method BMSC is allocated a cost of only $1,525 for these services.[29] Under Staff's proposal - $0 is allocated for ERP.[30]

I can go on. Management Fees include the costs for management services such as strategic advice and consultation concerning business planning, support, guidance, and policy making and general services. These expenses are critical to ensure the on-going health and sustainability of APIF, and thus, each of its subsidiaries, including BMSC. Under the Company's proposed allocation method, BMSC is allocated a cost of only $5,404 for these services.[31] Compare this to Staff's allocated cost of $0.[32]

Unit Holder Communication costs are incurred because APIF is a publicly traded entity on the Toronto Stock Exchange. APIF is obligated under securities law to report regularly on APIF'S financial condition to its unit holders. Communication costs are associated with the issuance of the quarterly and annual

[29] *See* Rebuttal Schedule C-2, page 16, line 10.

[30] *See* Staff Schedule CSB-12, line 17.

[31] *See* Rebuttal Schedule C-2, page 16, line 11.

[32] *See* Staff Schedule CSB-12, line 18.

reporting, as well as the annual information form, the management discussion and analysis, and press releases. As a publicly traded entity these costs are essential in order for APIF to have access to the capital markets. BMSC benefits from this because it ensures that capital is available for its ongoing capital needs. Under the Company's proposed allocation method, BMSC is allocated a cost of only $1,686.[33] Staff's allocated cost is $0.[34]

Finally, Trustee Fees are incurred for the Board of Trustees who represent the Unit Holders. Ultimately, the Unit Holders are the investors in BMSC. The Board approves the strategic direction of APIF, approves financial statements, provides corporate governance, comprises part of the audit committee, and oversees the strategic direction and health of the APIF on behalf of all of its Unit Holders. Ratepayers ultimately benefit from good corporate governance. Under the Company's proposed allocation method, BMSC is allocated a cost of only $1,931.[35] Staff's allocated cost is $0.[36]

Q. PLEASE CONTINUE WITH YOUR DISCUSSION OF THE OPERATING INCOME ADJUSTMENTS.

A. Rebuttal adjustment 16 reduces Contractual Services – Other by $6,284 and reflects a revision to the Company proposed direct filing adjustment 11 for known and measurable changes to allocated direct operations costs, accounting/billing costs and overhead costs. The Company originally proposed an adjustment for the increase in this expense in direct.[37]

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[33] *See* Rebuttal Schedule C-2, page 16, line 12.

[34] *See* Staff Schedule CSB-12, line 19.

[35] *See* Rebuttal Schedule C-2, page 16, line 13.

[36] *See* Staff Schedule CSB-12, line 20.

[37] Bourassa Dt. at 14.

Q. PLEASE COMMENT ON STAFF'S DISALLOWANCE OF THE INCREASES IN THE ALLOCATED DIRECT OPERATIONS, ACCOUNTING/BILLING AND OVERHEAD COSTS.

A. Staff rejects the Company's adjustment to the known and measurable increases to affiliate allocated accounting/billing and overhead expenses asserting that the increases were "not justified".[38] This does not tell us much about Staff's reasoning, but the information provided to Staff clearly shows that the direct operations costs, accounting and billing costs, and overhead costs proposed by the Company reflect known and measurable changes to the test year level of expenses related to payroll. The payroll expense changes include additional labor costs from annualization of salaries and wages to a full 12 months, additional labor costs from annualization of pay increases that occurred during the test year, and the cost of additional employees hired after the end of the test year for vacant positions during the test year. The annualization of salaries and wages is necessary because the test year included less than a full 12 months of wages for several employees. The pay increases are necessary because they reflect payroll costs of employees on a going forward basis. The additional employee costs include the wages for a Manager of Safety and Regulatory Matters, a Customer Service Representative, a Budget Analyst, and a Business and Strategic Planning Analyst. Arguably, these additional positions are necessary for the provision of safe and reliable service to rate payers.

Q. DID RUCO AGREE TO THE COMPANY'S DIRECT ADJUSTMENT FOR KNOWN AND MEASURABLE INCREASES TO ALLOCATED OPERATIONS, ACCOUNTING/BILLING, AND OVERHEAD COSTS.

[38] Brown Dt. at 18.

A. Yes, RUCO adopted the Company's proposed direct adjustment. RUCO has not had a chance to review the Company's rebuttal adjustment, but will have an opportunity to do so in its surrebuttal testimony.

Q. PLEASE CONTINUE.

A. Rebuttal adjustment 17 increases rate case expense by $50,000, or $16,667 annually. The proposed increase to rate case expense reflects the additional costs that have already been incurred negotiating the settlement agreement with the BHOA and the costs that have been and will be incurred in taking the steps necessary to support BMSC's request for relief. These costs were not considered in the initial estimate of rate case expense and, for now, $50,000 is a reasonable additional cost. This amount, like the total rate case expense, will be further revisited before rejoinder and the hearings in this docket. Of course, we hope that the various opportunities to minimize disputes set forth throughout BMSC's rebuttal filing are adopted, as these measures would go a long way to reducing the costs of the hearing and briefing.

Q. THANK YOU. PLEASE CONTINUE WITH YOUR DISCUSSION OF THE INCOME STATEMENT.

A. Rebuttal adjustment 18 reflects the synchronization of interest expense with the Company's proposed rate base.

Rebuttal adjustment 19 reflects income taxes at Company's proposed rates.

Q. DID STAFF AND RUCO COMPUTE INCOME TAXES ACCORDING TO THE METHOD APPROVED IN THE LAST CASE?

A. No. Neither Staff nor RUCO excluded the Scottsdale Lease operating expense from the determination of taxable income. In the last case, the Company proposed a gross-up for income taxes on the Scottsdale capacity operating lease expense and

proposed to include it in operating expenses.[39] Staff's proposed alternative was to exclude the Scottsdale capacity operating lease expense from operating expenses in the determination of taxable income, thereby providing higher income tax expense. The Commission adopted this method.[40] As a result of the failure to follow the method approved in the last case, Staff and RUCO have understated income tax expense.

Q. PLEASE COMMENT ON STAFF'S ADJUSTMENT TO REDUCE TRANSPORTATION EXPENSE.

A. The Company disagrees with Staff's adjustment to remove $5,375 of transportation expense related to a truck lease.[41] Staff believes the truck is shared between an affiliate, Gold Canyon Sewer Company, and BMSC. However, this truck is used exclusively by BMSC and Staff's adjustment is inappropriate.[42] This is discussed in more depth in Mr. Sorensen's Rebuttal Testimony.[43]

Q. PLEASE COMMENT ON STAFF'S RECOMMENDATION TO DISALLOW BMSC'S PROPOSED PURCHASED WASTEWATER TREATMENT ADJUSTMENT MECHANISM.

A. Staff has recommended that the Commission not approve BMSC's request for a Purchased Wastewater Adjustment Mechanism ("PWWAM").[44] The purpose of the adjusters like the PWWAM is to allow the Company's rates to reflect changes in certain operating expenses that fluctuate unpredictably outside of the Company's control, thereby more accurately reflecting the current cost of service and allowing

[39] Decision No. 69164 at 9.

[40] *Id.* at 9.

[41] Brown Dt. at 22.

[42] Sorensen Rb. at 14-15.

[43] Sorensen Rb. at 14-15.

[44] Brown Dt. at 26.

the Company a more realistic opportunity to achieve its authorized rate of return. These mechanisms are well-established ratemaking tools that work to keep the utility's revenue stable without the need for numerous costly and time-consuming rate case proceedings.

Staff does not believe that the $20,000 which BMSC estimated as an annual increase is significant enough to warrant an adjuster.[45] But consider that purchased wastewater treatment expense is one of the largest operating expenses of the Company (about 20 percent of operating expenses), and an increase of $20,000 annually represents over 5 percent of the Company net earnings. Further, assuming the Company files a rate case every three years, the unrecovered expense amounts to an estimated $60,000 or more. Given the significance of this expense and the fact that the City of Scottsdale has historically increased the wastewater treatment rate annually, the Company will immediately suffer earnings attrition when new rates are put into effect in the instant case unless the PWWAM is approved.

V. RATE DESIGN

Q. WHAT ARE THE PROPOSED RATES?

A. The proposed rates are:

Residential Charge:	$72.45
Commercial – Std. Rate (Per gallon)[46]:	$0.29048
Commercial – Special Rate (Per gallon)[47]:	
B-H Enterprises (7518 Elbow Bend West)	N/A

[45] Brown Dt. at 26.

[46] Per prior Commission order, commercial wastewater flows are based on the average daily flows set forth in Engineering Bulletin No. 12, Table 1, published by the Arizona Department of Environmental Quality (June 1989).

[47] Per prior Commission order, wastewater flows are based on Engineering Bulletin No. 12, Table 1. A one-bedroom dwelling is assumed to generate 200 gallons per day, each additional bedroom is assumed to generate an additional 100 gallons per day.

B-H Enterprises (7518 Elbow Bend East)	N/A
Barb's Pet Grooming	N/A
Boulders Resort	$0.29048
Carefree Dental	N/A
Ridgecrest Realty	N/A
Desert Forest	$0.29048
Desert Hills Pharmacy	N/A
El Pedegral	$0.29048
Lemon Tree	N/A
Body Shop	N/A
Spanish Village	$0.29048
Boulders Club	$0.29048
Anthony Vuitaggio	N/A

In addition, the proposed charge for reclaimed (non-potable) water is $150 per acre-foot.

Q. PLEASE COMMENT ON THE PROPOSED RATE DESIGNS OF STAFF AND RUCO.

A. Staff and RUCO recommend the same rate designs for residential and commercial customers – a flat rate for residential customers and a per gallon rate for commercial customers. In addition, all parties apply their respective increases evenly across all classes of customers.[48] Both BMSC and RUCO propose to charge the existing special rate commercial customers the same rate as standard commercial customers, while Staff continues to propose different rates for the special rate commercial customers. Staff's direct filing does not explain why it maintains separate rates for special rate customers. The Company continues to

[48] Moore Dt. at 17, Brown Dt. at 28.

believe that a special rate is no longer justified for the reasons articulated in the direct filing.[49]

Q. WHAT ABOUT EFFLUENT RATES?

A. Both BMSC and RUCO propose an effluent rate of $150.00 per acre foot or $0.46051 per 1,000 gallons. Staff proposes an effluent rate of $159.84 per acre foot or $0.490538 per 1,000 gallons. Staff increases the effluent rate by over 30 percent, which is in conflict with the effluent delivery agreement with the Boulder's Resort, which limits any increase to no more than 25 percent in a given year.[50] The Company's believes Staff's increase to the effluent rate would jeopardize the Company's ability to dispose of effluent causing it to choose more costly alternatives as long as it continues to produce effluent.

Q. PLEASE COMMENT ON THE COMPANY'S PROPOSED HOOK-UP FEE AND THE POSITIONS TAKEN BY STAFF AND/OR RUCO AT THIS STAGE OF THE PROCEEDING?

A. BMSC continues to propose its HUF tariff, and Mr. Sorensen states in his rebuttal that the Company understands that Staff now supports this tariff as proposed.[51]

Q. HAVE YOU ALSO REVIEWED DR. DOELLE'S TESTIMONY AND REQUEST FOR A "MORE RATIONALE RATE DESIGN"?

A. Yes, and I really hope not to have to engage in a "battle of experts" with Dr. Doelle given that Mr. Sorensen has addressed in his rebuttal testimony the Company's response to Dr. Doelle.[52]

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[49] Bourassa Dt. at 17.

[50] Bourassa Dt. at 8.

[51] Sorensen Dt. at 13.

[52] Sorensen Rb. at 4-6.

Q. MR. PETERSON, ON BEHALF OF THE BHOA, TESTIFIES THAT THE COMPANY WILL ADDRESS THE RATEMAKING RELATED TO THE SETTLEMENT AGREEMENT. CAN YOU DO THAT PLEASE?

A. I think what Mr. Peterson refers to is the proposed ratemaking mechanism for BMSC to recover a return on and of its investment. I would envision a surcharge, not unlike the arsenic recovery mechanisms the Commission has approved, but the name is not so important. The point is that a surcharge can be designed to accomplish the "rate relief" goals of the settlement agreement.

Q. WHAT ARE THOSE GOALS, MR. BOURASSA?

A. The specific language of the agreement as it relates to necessary rate relief is set forth in Mr. Sorensen's rebuttal testimony, along with the Company's general response to the BHOA's filing.[53] Again, it is not all that difficult to calculate a surcharge that would allow the Company to begin recovering a return on and of its investment in the plant closure at the time the project is complete, the cost is known and measurable. After a reasonable period for verification by Staff, such a surcharge would essentially be added to the existing rates, and then, in the next rate case, it would be rolled into the revenue requirement.

Q. ARE YOU PROPOSING A SPECIFIC SURCHARGE OR SURCHARGE MECHANISM AT THIS TIME?

A. No, nor do I think we need to. For one thing, once Staff and RUCO's rate analysts have a chance to respond to the BHOA's filing, more light might be shed on the best sort of mechanism to utilize, and I can address this issue further in rejoinder and at the hearings if appropriate.

[53] Sorensen Rb. at 7.

Q. BUT DOESN'T THE COMMISSION NEED TO KNOW THE RATE IMPACT IN ORDER TO APPROVE THE RELIEF BHOA WANTS?

A. No, no more so than it did when approving the ACRMs or other similar relief that has been afforded electric utilities in extraordinary circumstances. We can't know the rate impact precisely until we know the final costs to close the plant as contemplated in the parties' agreement. But, with the current estimated cost of at least $1.5 million, I can estimate a rate increase of approximately $15 per customer per month through a surcharge mechanism. This includes the original cost of $1.5 million multiplied by the weighted cost of capital of 12.4 percent grossed up for income taxes using a factor of 1.6286 plus depreciation expense of $75,000 on the added plant divided by the test-year end of 2,100 divided by 12.

Q. WHAT ABOUT CHANGES IN OPERATING EXPENSES?

A. With the exception of the increases in the monthly cost for wastewater treatment by Scottsdale, which increase is covered by the Company's proposed PWWAM, changes in operating expenses are unlikely to be known and measurable at the time a surcharge goes into effect, and therefore they would not be appropriate for recovery in this manner.

Q. DOES THAT CONCLUDE YOUR TESTIMONY?

A. Yes.

BOURASSA
RATE BASE, INCOME STATEMENT & RATE DESIGN SCHEDULES

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Computation of Increase in Gross Revenue
Requirements As Adjusted

Exhibit
Rebuttal Schedule A-1
Page 1
Witness: Bourassa

Line No.			
1	Fair Value Rate Base	$	3,716,649
2			
3	Adjusted Operating Income		(129,420)
4			
5	Current Rate of Return		-3.48%
6			
7	Required Operating Income	$	460,864
8			
9	Required Rate of Return on Fair Value Rate Base		12.40%
10			
11	Operating Income Deficiency	$	590,285
12			
13	Gross Revenue Conversion Factor		1.6286
14			
15	Increase in Gross Revenue Revenue Requirement	$	961,338
16			
17	Test Year Revenues	$	1,580,170
18	Increase in Gross Revenue Revenue Requirement	$	961,338
19	Proposed Revenue Requirement	$	2,541,508
20	% Increase		60.84%
21			

22	**Customer**	**Present**	**Proposed**	**Dollar**	**Percent**
23	**Classification**	**Rates**	**Rates**	**Increase**	**Increase**
24					
25					
26	Residential	$ 1,077,880	$ 1,711,052	$ 633,172	58.74%
27	Commercial (Standard Rate)	378,678	601,150	222,472	58.75%
28	Commercial (Special Rate)	98,964	199,445	100,481	101.53%
29	Effluent Sales	15,917	19,578	3,661	23.00%
30					
31	Annualization	2,145	3,405	1,260	58.74%
32				-	0.00%
33	**Subtotal**	$ 1,573,584	$ 2,534,629	$ 961,045	61.07%
34					
35	Other Wastewater Revenues	6,915	6,915	-	0.00%
36	Reconciling Amount H-1 to C-1	(329)	(36)	293	-89.06%
37					
38	***Total of Water Revenues***	$ 1,580,499	$ 2,541,544	$ 961,338	60.82%
39					
40					
41					
42	SUPPORTING SCHEDULES:				
43	Rebuttal B-1				
44	Rebuttal C-1				
45	Rebuttal C-3				
46	Rebuttal H-1				
47					
48					

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Summary of Rate Base

Exhibit
Rebuttal Schedule B-1
Page 1
Witness: Bourassa

Line No.		Original Cost Rate base	Fair Value Rate Base
1			
2	Gross Utility Plant in Service	$ 11,646,544	$ 11,646,544
3	Less: Accumulated Depreciation	5,722,666	5,722,666
4			
5	Net Utility Plant in Service	$ 5,923,878	$ 5,923,878
6			
7	Less:		
8	Advances in Aid of		
9	Construction	1,711,260	1,711,260
10	Contributions in Aid of		
11	Construction	5,232,139	5,232,139
12	Accumulated Amortization of CIAC	(4,214,384)	(4,214,384)
13			
14	Customer Meter Deposits	94,290	94,290
15	Deferred Income Taxes & Credits	(194,898)	(194,898)
16		-	-
17			
18			
19	Plus:		
20	Unamortized Finance		
21	Charges	-	-
22	Deferred Regulatory Assets	389,035	389,035
23	Allowance for Working Capital	32,142	32,142
24			
25			
26	Total Rate Base	$ 3,716,649	$ 3,716,649
27			
28			
29			
30	SUPPORTING SCHEDULES:	RECAP SCHEDULES:	
31	Rebuttal B-2	A-1	
32			
33			
34			
35			

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Original Cost Rate Base Proforma Adjustments

Exhibit
Rebuttal Schedule B-2
Page 1
Witness: Bourassa

Line No.		Actual at End of Test Year	Proforma Adjustments Amount	Adjusted at end of Test Year
1	Gross Utility			
2	Plant in Service	$ 11,357,735	288,809	$ 11,646,544
3				
4	**Less:**			
5	Accumulated			
6	Depreciation	5,625,025	97,641	5,722,666
7				
8				
9	Net Utility Plant			
10	in Service	$ 5,732,710		$ 5,923,878
11				
12	**Less:**			
13	Advances in Aid of			
14	Construction	$ 1,457,009	254,251	$ 1,711,260
15				
16	Contributions in Aid of			
17	Construction (CIAC)	5,232,139	-	5,232,139
18				
19	Accumulated Amortization of CIAC	(4,214,384)	-	(4,214,384)
20				
21	Customer Meter Deposits	94,290	-	94,290
22	Deferred Income Taxes	(170,554)	(24,344)	(194,898)
23				
24				
25	**Plus:**			
26	Unamortized Finance			
27	Charges	-	-	-
28	Deferred Regulatory Assets	389,035	-	389,035
29	Allowance for Working Capital	-	32,142	32,142
30				
31	Total	$ 3,723,245		$ 3,716,649
32				
33				
34				
35	SUPPORTING SCHEDULES:			RECAP SCHEDULES:
36	Rebuttal B-2, pages 1-6			Rebuttal B-1
37				
38				
39				
40				
41				
42				
43				
44				

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Original Cost Rate Base Proforma Adjustments

Exhibit
Rebuttal Schedule B-2
Page 2
Witness: Bourassa

Line No.		Actual at End of Test Year	Proforma Adjustments 1 Plant in Service	2 Accum. Depr.	3 AIAC	4 Deferred Income Taxes	5 Working Capital	Rebuttal Adjusted at end of Test Year
1	Gross Utility							
2	Plant in Service	$ 11,357,735	288,809					$ 11,646,544
3								
4	**Less:**							
5	Accumulated							
6	Depreciation	5,625,025		97,641				5,722,666
7								
8								
9	Net Utility Plant							
10	in Service	$ 5,732,710	$ 288,809	$ (97,641)		$ -	$ -	$ 5,923,878
11								
12	**Less:**							
13	Advances in Aid of							
14	Construction	1,457,009			254,251			1,711,260
15								
16	Contributions in Aid of							
17	Construction (CIAC)	5,232,139						5,232,139
18								
19	Accumulated Amort of CIAC	(4,214,384)						(4,214,384)
20								
21	Customer Meter Deposits	94,290						94,290
22	Deferred Income Taxes	(170,554)				(24,344)		(194,898)
23								
24								
25	**Plus:**							
26	Unamortized Finance							
27	Charges	-						-
28	Deferred Reg. Assets	389,035						389,035
29	Allowance for Working Capital	-					$ 32,142	32,142
30								
31	Total	$ 3,723,245	$ 288,809	$ (97,641)	$ (254,251)	$ 24,344	$ 32,142	$ 3,716,649
32								
33								
34								
35	SUPPORTING SCHEDULES:					RECAP SCHEDULES:		
36	Rebuttal B-2, pages 3-6					Rebuttal B-1		
37	Rebuttal B-5							

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Original Cost Rate Base Proforma Adjustments
Adjustment Number 1

Exhibit
Schedule B-2
Page 3
Witness: Bourassa

Line No.				Adjustments						
				A	B	C	D	E	F	
1	Plant-in-Service									Rebuttal
2										Adjusted
3	Acct.		Adjusted	Unrecorded	Unrecorded		Odor			Original
4	No.	Description	Orginal Cost	Plant Addition	Plant Retirement	Capitalized Expenses	Control Unit			Cost
5	351	Organization	-							-
6	352	Franchises	-							-
7	353	Land and Land Rights	461,300							461,300
8	354	Structures and Improvements	2,557,920			2,300				2,560,220
9	355	Power Generation Equipment	-							-
10	360	Collection Sewers - Force	706,292			1,600				707,892
11	361	Collection Sewers - Gravity	4,264,948							4,264,948
12	362	Special Collecting Structures	-							-
13	363	Services to Customers	198,723							198,723
14	364	Flow Measuring Devices	31,512							31,512
15	365	Flow Measuring Installations	179,622							179,622
16	370	Receiving Wells	690,626	254,251	(13,208)	1,200				932,871
17	371	Effluent Pumping Equipment	654,844			2,803				657,647
18	380	Treatment and Disposal Equip.	143,578				38,625			182,203
19	381	Plant Sewers	123,289			1,238				124,527
20	382	Outfall Sewer Lines	-							-
21	389	Other Plant and Misc. Equipment	939,432							939,432
22	390	Office Furniture and Equipment	224,587							224,587
23	391	Transportation Equipment	107,367							107,367
24	393	Tools, Shop and Garage Equip.	5,754							5,754
25	394	Laboratory Equipment	7,488							7,488
26	395	Power Operated Equipment	-							-
27	396	Communication Equipment	40,451							40,451
28	398	Other Tangible Plant	-							-
29			-							-
30		TOTALS	$ 11,357,735	$ 254,251	$ (13,208)	$ 9,141	$ 38,625	$ -	$ -	$ 11,646,544
31										
32	Adjusted Plant-in-Service per Direct									$ 11,357,735
33										
34	Increase (decrease) in Plant-in-Service									$ 288,809
35										
36	Adjustment to Plant-in-Service									$ 288,809
37										
38	SUPPORTING SCHEDULES			ADJUSTMENTS						
39	Rebuttal B-2, pages 3.1-3.4			Adj. A - Staff Adj. #1 New Trade Center Lift Sta.			Adj. D - Ordor Control Unit RUCO - see Schedule RLM-4			
40				Adj. B - Staff Adj. #1 Old Trade Center Lift Sta.						
41				Adj. C - Staff Adj. #2 Capitalized Expenses						
42										

Black Mountain Sewer Corporation
Plant Additions and Retirements

Exhibit
Rebuttal Schedule B-2
Page 3.1

Account No.	Description	Deprec. Rate Before Dec-06	Deprec. Rate After Dec-06	Per Decision 69164 Plant At 12/31/2004	2004 Accum. Depr.	2005 Plant Additions	2005 Plant Adjustments[1]	2005 Adjusted Plant Additions	2005 Plant Retirements	2005 Plant Balance	2005 Deprec.
351	Organization	0.0000%	0.00%	-	-			-		-	-
352	Franchises	0.0000%	0.00%	-	-			-		-	-
353	Land and Land Rights	0.0000%	0.00%	461,300	-			-		461,300	-
354	Structures and Improvements	5.0000%	3.33%	1,239,905	888,015	56,562	(1,917)	54,645		1,294,549	63,361
355	Power Generation Equipment	5.0000%	5.00%	-	706			-		-	(706)
360	Collection Sewers - Force	5.0000%	2.00%	568,413	154,483	94,624	(5,062)	89,562		657,976	30,660
361	Collection Sewers - Gravity	5.0000%	2.00%	3,614,544	2,486,740	297,571	(21,880)	275,691		3,890,235	187,619
362	Special Collecting Structures	5.0000%	2.00%	-	-			-		-	-
363	Services to Customers	5.0000%	2.00%	157,218	128,612	19,337		19,337		176,555	8,344
364	Flow Measuring Devices	5.0000%	10.00%	39,829	23,004		(8,135)	(8,135)		31,694	1,788
365	Flow Measuring Installations	5.0000%	10.00%	156,204	3,959	19,404		19,404		175,608	8,295
370	Receiving Wells	5.0000%	3.33%	696,137	199,051			-		696,137	34,807
371	Effluent Pumping Equipment	5.0000%	12.50%	453,558	244,706	11,119		11,119		464,677	22,956
380	Treatment and Disposal Equipment	5.0000%	5.00%	-	-	6,288		6,288		6,288	157
381	Plant Sewers	5.0000%	5.00%	123,289	84,017			-		123,289	6,164
382	Outfall Sewer Lines	5.0000%	3.33%	-	-			-		-	-
389	Other Plant and Misc. Equipment	5.0000%	6.67%	719,140	80,678	99,447	(7,527)	91,920		811,059	38,255
390	Office Furniture and Equipment	5.0000%	6.67%	220,360	27,165	1,465		1,465		221,825	11,055
391	Transportation Equipment	5.0000%	20.00%	87,811	7,642			-		87,811	4,391
393	Tools, Shop and Garage Equipment.	5.0000%	5.00%	-	-			-		-	-
394	Laboratory Equipment	5.0000%	10.00%	7,279	352	209		209		7,488	369
395	Power Operated Equipment	5.0000%	5.00%	-	-			-		-	-
396	Communication Equipment	5.0000%	10.00%	-	-			-		-	-
398	Other TangiblePlant	5.0000%	10.00%	-	-			-		-	-
								-		-	-
	Plant Held for Future Use										
	TOTAL WATER PLANT			8,544,987	4,331,129	606,025	(44,521)	561,504	-	9,106,490	417,516

[1] Affiliate Profit

Black Mountain Sewer Corporation
Plant Additions and Retirements

Exhibit
Rebuttal Schedule B-2
Page 3.2

Account No.	Description	Deprec. Rate Before Dec-06	Deprec. Rate After Dec-06	2006 Plant Additions	2006 Plant Adjustments[1]	2006 Adjusted Plant Additions	2006 Plant Retirements	2006 Plant Balance	2006 Deprec.
351	Organization	0.0000%	0.00%			-		-	-
352	Franchises	0.0000%	0.00%			-		-	-
353	Land and Land Rights	0.0000%	0.00%			-		461,300	-
354	Structures and Improvements	5.0000%	3.33%	3,625		3,625		1,298,175	63,014
355	Power Generation Equipment	5.0000%	5.00%			-		-	-
360	Collection Sewers - Force	5.0000%	2.00%	3,592		3,592		661,568	31,339
361	Collection Sewers - Gravity	5.0000%	2.00%	112,559	(22,710)	89,849		3,980,083	186,920
362	Special Collecting Structures	5.0000%	2.00%			-		-	-
363	Services to Customers	5.0000%	2.00%	10,429		10,429		186,983	8,634
364	Flow Measuring Devices	5.0000%	10.00%		(182)	(182)		31,512	1,712
365	Flow Measuring Installations	5.0000%	10.00%	3,740		3,740		179,348	9,613
370	Receiving Wells	5.0000%	3.33%	2,141		2,141		698,276	33,890
371	Effluent Pumping Equipment	5.0000%	12.50%	44,676		44,676		509,353	27,395
380	Treatment and Disposal Equipment	5.0000%	5.00%	12,184		12,184		18,472	619
381	Plant Sewers	5.0000%	5.00%			-		123,289	6,164
382	Outfall Sewer Lines	5.0000%	3.33%			-		-	-
389	Other Plant and Misc. Equipment	5.0000%	6.67%	53,055	(740)	52,315		863,374	43,026
390	Office Furniture and Equipment	5.0000%	6.67%			-		221,825	11,400
391	Transportation Equipment	5.0000%	20.00%			-		87,811	5,488
393	Tools, Shop and Garage Equipment.	5.0000%	5.00%			-		-	-
394	Laboratory Equipment	5.0000%	10.00%			-		7,488	406
395	Power Operated Equipment	5.0000%	5.00%			-		-	-
396	Communication Equipment	5.0000%	10.00%			-		-	-
398	Other TangiblePlant	5.0000%	10.00%			-		-	-
						-		-	-
	Plant Held for Future Use								
	TOTAL WATER PLANT			246,000	(23,632)	222,368	-	9,328,859	429,620

[1] Affiliate Profit

Black Mountain Sewer Corporation
Plant Additions and Retirements

Exhibit
Rebuttal Schedule B-2
Page 3.3

Account No.	Description	Deprec. Rate Before Dec-06	Deprec. Rate After Dec-06	2007 Plant Additions	2007 Plant Adjustments[1]	2007 Adjusted Plant Additions	2007 Plant Retirements	2007 Plant Balance	2007 Deprec.
351	Organization	0.0000%	0.00%			-		-	-
352	Franchises	0.0000%	0.00%			-		-	-
353	Land and Land Rights	0.0000%	0.00%			-		461,300	-
354	Structures and Improvements	5.0000%	3.33%	1,539	(20,391)	(18,852)		1,279,322	42,915
355	Power Generation Equipment	5.0000%	5.00%			-		-	-
360	Collection Sewers - Force	5.0000%	2.00%	34,935	(2,469)	32,466		694,034	13,556
361	Collection Sewers - Gravity	5.0000%	2.00%	211,268	(32,273)	178,995		4,159,078	81,392
362	Special Collecting Structures	5.0000%	2.00%			-		-	-
363	Services to Customers	5.0000%	2.00%			-		186,983	3,740
364	Flow Measuring Devices	5.0000%	10.00%			-		31,512	3,151
365	Flow Measuring Installations	5.0000%	10.00%			-		179,348	17,935
370	Receiving Wells	5.0000%	3.33%			-		698,278	23,253
371	Effluent Pumping Equipment	5.0000%	12.50%	74,764	(5,336)	69,428		578,780	68,006
380	Treatment and Disposal Equipment	5.0000%	5.00%	4,387		4,387		22,859	1,033
381	Plant Sewers	5.0000%	5.00%			-		123,289	6,164
382	Outfall Sewer Lines	5.0000%	3.33%			-		-	-
389	Other Plant and Misc. Equipment	5.0000%	6.67%	784	(942)	(158)		863,216	57,582
390	Office Furniture and Equipment	5.0000%	6.67%	2,763		2,763		224,587	14,888
391	Transportation Equipment	5.0000%	20.00%	19,556		19,556		107,367	19,518
393	Tools, Shop and Garage Equipment.	5.0000%	5.00%	3,493		3,493		3,493	87
394	Laboratory Equipment	5.0000%	10.00%			-		7,488	749
395	Power Operated Equipment	5.0000%	5.00%			-		-	-
396	Communication Equipment	5.0000%	10.00%			-		-	-
398	Other TangiblePlant	5.0000%	10.00%			-		-	-
						-		-	
	Plant Held for Future Use								
	TOTAL WATER PLANT			353,486	(61,411)	292,077	-	9,620,936	353,971

[1] Affiliate Profit

Black Mountain Sewer Corporation
Plant Additions and Retirements

Exhibit
Rebuttal Schedule B-2
Page 3.4

Account No.	Description	Deprec. Rate Before Dec-06	Deprec. Rate After Dec-06	Jun.-Jun. 2008 Plant Additions	Jun.-Jun. 2008 Plant Adjustments[1]	Staff Jun.-Jun. 2008 Plant Adjustments	Jun.-Jun. 2008 Adjusted Plant Additions	Jun.-Jun. 2008 Plant Retirements	Staff Jun.-Jun. 2008 Plant Retirements	2002 to Dec. 2007 A/D Adjustment	June 30 2008 Plant Balance	Jun.-Jun. 2008 Deprec.
351	Organization	0.0000%	0.00%				-				-	-
352	Franchises	0.0000%	0.00%				-				-	-
353	Land and Land Rights	0.0000%	0.00%				-				461,300	-
354	Structures and Improvements	5.0000%	3.33%	1,290,255	(11,658)	2,300	1,280,897				2,560,220	31,964
355	Power Generation Equipment	5.0000%	5.00%				-				-	-
360	Collection Sewers - Force	5.0000%	2.00%	12,595	(337)	1,600	13,858				707,892	7,010
361	Collection Sewers - Gravity	5.0000%	2.00%	130,250	(4,380)		125,870				4,284,948	42,220
362	Special Collecting Structures	5.0000%	2.00%				-				-	-
363	Services to Customers	5.0000%	2.00%	11,739			11,739				198,723	1,929
364	Flow Measuring Devices	5.0000%	10.00%				-				31,512	1,576
365	Flow Measuring Installations	5.0000%	10.00%	430	(156)		274				179,622	8,974
370	Receiving Wells	5.0000%	3.33%	544	(311)	255,451	255,684	(7,883)	(13,208)		946,079	13,579
371	Effluent Pumping Equipment	5.0000%	12.50%	78,862	(2,798)	2,803	78,867				657,647	38,638
380	Treatment and Disposal Equipment	5.0000%	5.00%	129,937	(9,218)	38,625	159,344			10,183	182,203	2,563
381	Plant Sewers	5.0000%	5.00%			1,238	1,238				124,527	3,098
382	Outfall Sewer Lines	5.0000%	3.33%				-				-	-
389	Other Plant and Misc. Equipment	5.0000%	6.67%	79,092	(2,876)		76,216				939,432	30,059
390	Office Furniture and Equipment	5.0000%	6.67%				-				224,587	7,490
391	Transportation Equipment	5.0000%	20.00%				-				107,367	10,737
393	Tools, Shop and Garage Equipment.	5.0000%	5.00%	2,262			2,262				5,754	116
394	Laboratory Equipment	5.0000%	10.00%				-				7,488	374
395	Power Operated Equipment	5.0000%	5.00%				-				-	-
396	Communication Equipment	5.0000%	10.00%	40,451			40,451				40,451	1,011
398	Other TangiblePlant	5.0000%	10.00%				-				-	-
							-				-	-
	Plant Held for Future Use											
	TOTAL WATER PLANT			1,776,417	(31,734)	302,017	2,046,700	(7,883)	(13,208)	10,183	11,659,752	201,338

[1] Affiliate Profit

Black Mountain Sewer Corporation
Plant Additions and Retirements

Exhibit
Rebuttal Schedule B-2
Page 3.5

Account No.	Description	Deprec. Rate Before Dec-06	Deprec. Rate After Dec-06	Year End Accumulated Depreciation by Account 2004	2005	2006	2007	2008
351	Organization	0.0000%	0.00%	-	-	-	-	-
352	Franchises	0.0000%	0.00%	-	-	-	-	-
353	Land and Land Rights	0.0000%	0.00%	-	-	-	-	-
354	Structures and Improvements	5.0000%	3.33%	888,015	951,376	1,014,390	1,057,305	1,089,269
355	Power Generation Equipment	5.0000%	5.00%	706	-	-	-	-
360	Collection Sewers - Force	5.0000%	2.00%	154,483	185,143	216,482	230,038	237,047
361	Collection Sewers - Gravity	5.0000%	2.00%	2,486,740	2,676,359	2,863,279	2,944,671	2,986,891
362	Special Collecting Structures	5.0000%	2.00%	-	-	-	-	-
363	Services to Customers	5.0000%	2.00%	128,612	136,957	145,591	149,330	151,259
364	Flow Measuring Devices	5.0000%	10.00%	23,004	24,792	26,504	29,655	31,230
365	Flow Measuring Installations	5.0000%	10.00%	3,959	12,254	21,868	39,802	48,777
370	Receiving Wells	5.0000%	3.33%	199,051	233,858	267,748	291,001	283,489
371	Effluent Pumping Equipment	5.0000%	12.50%	244,706	267,662	295,057	363,065	401,703
380	Treatment and Disposal Equipment	5.0000%	5.00%	-	157	776	1,810	14,556
381	Plant Sewers	5.0000%	5.00%	84,017	90,181	96,346	102,510	105,608
382	Outfall Sewer Lines	5.0000%	3.33%	-	-	-	-	-
389	Other Plant and Misc. Equipment	5.0000%	6.67%	80,678	118,933	161,959	219,541	249,600
390	Office Furniture and Equipment	5.0000%	6.67%	27,165	38,219	49,619	64,507	71,997
391	Transportation Equipment	5.0000%	20.00%	7,642	12,032	17,521	37,038	47,775
393	Tools, Shop and Garage Equipment.	5.0000%	5.00%	-	-	-	87	203
394	Laboratory Equipment	5.0000%	10.00%	352	721	1,126	1,875	2,250
395	Power Operated Equipment	5.0000%	5.00%	-	-	-	-	-
396	Communication Equipment	5.0000%	10.00%	-	-	-	-	1,011
398	Other TangiblePlant	5.0000%	10.00%	-	-	-	-	-
				-	-	-	-	-
	Plant Held for Future Use			-				
	TOTAL WATER PLANT			4,331,129	4,748,645	5,178,265	5,532,236	5,722,666

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Original Cost Rate Base Proforma Adjustments
Adjustment Number 2

Exhibit
Schedule B-2
Page 4
Witness: Bourassa

Line No.				A	B	C	D	B	
1	Plant-in-Service								
2			Adjusted	Unrecorded		Ordor	Ordor	Difference To	Rebuttal Adjusted
3	Acct.		Accum.	Plant	Plant	Control	Control	Computed	Accum.
4	No.	Description	Depr.	Addition	Retirement	Unit	Unit	Amount	Depr.
5	351	Organization	-					-	-
6	352	Franchises	-					-	-
7	353	Land and Land Rights	-					-	-
8	354	Structures and Improvements	1,067,642			38		21,590	1,089,269
9	355	Power Generation Equipment	-					-	-
10	360	Collection Sewers - Force	217,363			16		19,669	237,047
11	361	Collection Sewers - Gravity	2,869,293					117,598	2,986,891
12	362	Special Collecting Structures	-					-	-
13	363	Services to Customers	145,843					5,416	151,259
14	364	Flow Measuring Devices	32,828					(1,597)	31,230
15	365	Flow Measuring Installations	57,602					(8,826)	48,777
16	370	Receiving Wells	283,038	4,233	(13,208)	20		9,405	283,489
17	371	Effluent Pumping Equipment	437,968			175		(36,439)	401,703
18	380	Treatment and Disposal Equipment	3,890				10,183	483	14,556
19	381	Plant Sewers	105,592			31		(15)	105,608
20	382	Outfall Sewer Lines	-					-	-
21	389	Other Plant and Misc. Equipment	263,481					(13,881)	249,600
22	390	Office Furniture and Equipment	75,700					(3,703)	71,997
23	391	Transportation Equipment	60,947					(13,172)	47,775
24	393	Tools, Shop and Garage Equipment.	203					-	203
25	394	Laboratory Equipment	2,624					(374)	2,250
26	395	Power Operated Equipment	-					-	-
27	396	Communication Equipment	1,011					-	1,011
28	398	Other TangiblePlant	-					-	-
29			-						-
30		TOTALS	$ 5,625,025	$ 4,233	$ (13,208)	$ 280	$ 10,183	$ 96,152	$ 5,722,666
31									
32	Adjusted Accumulated Depreciation per Direct								$ 5,625,025
33									
34	Increase (decrease) in Plant-in-Service								$ 97,641
35									
36	Adjustment to Plant-in-Service								$ 97,641
37									
38	SUPPORTING SCHEDULES								
39	Rebuttal B-2, pages 3.5								
40									

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Original Cost Rate Base Proforma Adjustments
Adjustment Number 3

Exhibit
Rebuttal Schedule B-2
Page 5
Witness: Bourassa

Line No.

Advances in aid of construction

	Test Year Adjusted Balance	Adjustment		Rebuttal Test Year Adjusted Balance
	$ 1,457,009	254,251	[1]	$ 1,711,260

[1] Line Extension Agreement for New Trade Lift Station

SUPPORTING SCHEDULE
See Testimony

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Original Cost Rate Base Proforma Adjustments
Adjustment 5

Exhibit
Rebuttal Schedule B-2
Page 6
Witness: Bourassa

Deferred Income Tax as of June 30, 2008

Line No.		Adjusted Book Value[1]	Tax Value	Probability of Realization of Future Tax Benefit	Deductible TD (Taxable TD) Expected to be Realized	Tax Rate	Future Tax Asset Current	Future Tax Asset Non Current	Future Tax Liability Current	Future Tax Liability Non Current
6	Plant-in-Service	$ 11,646,544								
7	Accum. Deprec.	(5,722,666)								
8	CIAC	(1,017,755)								
9	Fixed Assets	$ 4,906,123	$ 3,699,796	100.0%	$ (1,206,327)	38.6%				$ (465,629)
10	AIAC	$ (1,711,260)	-	100.0%	$ 1,711,260	38.6%		$ 660,527		
12							$ -	$ 660,527	$ -	$ (465,629)
14					Net Asset (Liability)		$ 194,898			
16					DIT Asset per Direct		$ 170,554			
18					Adjustment to DIT		$ (24,344)			

[1] Adjusted per Rebuttal B-2

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Computation of Working Capital

Exhibit
Schedule B-5
Page 1
Witness: Bourassa

Line No.			
1			
2	Cash Working Capital - Lead-Lag Study	$	14,816
3	Prepayments		17,326
4	Materials & Supplies		-
5			
6			
7			
8			
9	Total Working Capital Allowance	$	32,142
10			
11			
12	Working Capital Requested	$	32,142
13			
14			
15	SUPPORTING SCHEDULES:	RECAP SCHEDULES:	
16	Rebuttal B-5, page 2	Rebuttal B-1	
17			

Black Mountain Sewer Corporation
Lead/Lag Study
Cash Working Capital

Exhibit
Rebuttal Schedule B-5
Page 2
Witness: Bourassa

Line No.	Description	A Proforma TY Expense	B Revenue Lag Days[1]	C Expense Lag Days	D Net Lag Days	E Lead/Lag Factor	F Cash Working Capital Required
	(A)	(B)	(C)	(D)	(E)	(Col. E/365) (F)	(Col. B x Col. F) (G)
10	Salaries and Wages						
11	Net Pay	-	NA	NA	NA	NA	-
12	Income Taxes Withheld	-	NA	NA	NA	NA	-
13	Payroll taxes Withheld	-	NA	NA	NA	NA	-
15	Pensions and Benefits	-	NA	NA	NA	NA	-
17	Purchased Power[2]	54,690	11.40	39.79	(28.39)	-0.07778	(4,254)
19	Purchased Wastewater Treatment[3]	338,381	11.40	38.01	(26.61)	-0.07290	(24,668)
21	Rents- Building[4]	38,262	11.40	(15.00)	26.40	0.07233	2,767
23	Scottsdale Capacity Lease[5]	164,522	11.40	(15.00)	26.40	0.07233	11,900
25	Contractual Services - Allocated Expense[6]	514,028	11.40	15.00	(3.60)	-0.00986	(5,068)
27	Regulatory Commission Expense[7]	76,667	11.40	(360.00)	371.40	1.01753	78,011
29	Insurance[8]	18,704	11.40	(270.00)	281.40	0.77096	14,420
31	Other Operating Expenses[9]	201,953	11.40	45.00	(33.60)	-0.09205	(18,590)
33	Taxes						
34	Employer's Payroll Taxes	-	NA	NA	NA	NA	-
35	Property Taxes[10]	32,700	11.40	182.00	(170.60)	-0.46740	(15,284)
36	Income Taxes[11]	348,134	11.40	37.00	(25.60)	-0.07014	(24,418)
38	Total Cash Working Capital						**$ 14,816**

[1] Revenue lag days equals -15 day service lag plus 4.65 day billing lag plus 21.75 day average customer payment lag.
[2] Power bill expense lag days equals 15 days to mid-point of service period plus 24.79 days from billing date to the paid date.
[3] Wastewater treatment expense lag days equals 15 days to mid-point of service period plus 23.01 days from billing date to the due date.
[4] Rents - building payment due 1st of month of serivce period. Expense lag days equals -15 days to mid point of service period.
[5] Scottsdale lease (debt) payment due 1st of month following service period. Expense lag days equals 15 days to mid point of service period.
[6] Contractual Services allocation lag days equals 15 days to mid-point of service period.
[7] Rate case expense lag days is paid before new rates are put into effect. Weighted average expense lag days is -360 days
[8] Insurance is paid once annually. Expense lag days equals weighted average expense lag days is -270 days.
[9] Other operating expenses (excludes depreciation, amortization, purchased power, ww treatment, Scottsdale capcity lease, property taxes, *rent - buliding, insurance, allocated* contractual services, and income taxes. Lag days equals 15 days to mid-point of service period plus average 30 days to due date of bill.
[10] Property tax expense lag days equals the weighted average lag days for payment of property taxes due on Oct 1 of current year and May 1 of following year.

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Income Statement

Exhibit
Schedule C-1
Page 1
Witness: Bourassa

Line No.		Test Year Book Results	Adjustment	Test Year Adjusted Results	Proposed Rate Increase	Adjusted with Rate Increase
1	**Revenues**					
2	Flat Rate Revenues	$ 1,557,337	$ -	$ 1,557,337	$ 961,338	$ 2,518,675
3	Measured Revenues	15,917	-	15,917	-	15,917
4	Other Wastewater Revenues	6,916	-	6,916	-	6,916
5		$ 1,580,170	$ -	$ 1,580,170	$ 961,338	$ 2,541,508
6	**Operating Expenses**					
7	Salaries and Wages	$ -	-	$ -	-	$ -
8	Purchased Wastewater Treatment	335,255	3,126	338,381	-	338,381
9	Sludge Removal Expense	706	-	706	-	706
10	Purchased Power	54,690	-	54,690	-	54,690
11	Fuel for Power Production	928	-	928	-	928
12	Chemicals	37,489	3,324	40,813	-	40,813
13	Materials and Supplies	11,224	-	11,224	-	11,224
14	Contractual Services	9,362	37,354	46,716	-	46,716
15	Contractual Services- Testing	16,955	12,094	29,049	-	29,049
16	Contractual Services - Other	553,043	(39,015)	514,028	-	514,028
17	Equipment Rental	1,863	-	1,863	-	1,863
18	Rents - Building	19,830	18,432	38,262	-	38,262
19	Transportation Expenses	34,445	-	34,445	-	34,445
20	Insurance - General Liability	18,704	-	18,704	-	18,704
21	Insurance - Other	990	-	990	-	990
22	Regulatory Commission Expense	60,000	16,667	76,667	-	76,667
23	Miscellaneous Expense	20,845	-	20,845	-	20,845
24	Bad Debt Expense	11,962	2,412	14,374	-	14,374
25	Scottsdale Capacity (Operating Lease)	164,522	-	164,522	-	164,522
26	Amort. of Additional Scottsdale Cap.	48,629	-	48,629	-	48,629
27	Depreciation and Amortization	224,818	19,168	243,986	-	243,986
28	Taxes Other Than Income	(1,780)	1,780	-	-	-
29	Property Taxes	32,414	285	32,700	-	32,700
30	Income Tax	7,760	(30,692)	(22,932)	371,066	348,134
31				-		-
32	**Total Operating Expenses**	$ 1,664,655	$ 44,936	$ 1,709,590	$ 371,066	$ 2,080,656
33	**Operating Income**	$ (84,485)	$ (44,936)	$ (129,420)	$ 590,272	$ 460,852
34	**Other Income (Expense)**					
35	Interest Income	-	-	-	-	-
36	Other income	-	-	-	-	-
37	Interest Expense	(67,693)	(3,887)	(71,580)	-	(71,580)
38	Other Expense	-	-	-	-	-
39						
40	**Total Other Income (Expense)**	$ (67,693)	$ (3,887)	$ (71,580)	$ -	$ (71,580)
41	**Net Profit (Loss)**	$ (152,178)	$ (48,823)	$ (201,001)	$ 590,272	$ 389,271
42						
43	SUPPORTING SCHEDULES:				RECAP SCHEDULES:	
44	Rebuttal C-1, page 2				Rebuttal A-1	
45						
46						

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Income Statement

Exhibit
Rebuttal Schedule C-1
Page 2.1
Witness: Bourassa

Continued on Page 2.2

Line No.		Direct Adjusted Test Year Book Results	1 Depreciation	2 Property Taxes	3 Expensed Plant	4 Scottsdale Treatment	5 Annualize WW Treatment	6 Chemicals Expense	7 Annualize Chemicals Expense	8 Testing Expense	9 Rent Expense	10 Normalize Contractual Services	11 Bad Debt Expense
1	**Revenues**												
2	Flat Rate Revenues	$ 1,557,337											
3	Measured Revenues	15,917											
4	Other Wastewater Revenues	6,916											
5		$ 1,580,170	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
6	**Operating Expenses**												
7	Salaries and Wages	$ -											
8	Purchased Wastewater Treatment	335,255				2,509	615						
9	Sludge Removal Expense	706											
10	Purchased Power	54,690											
11	Fuel for Power Production	926											
12	Chemicals	37,489						3,191	133				
13	Materials and Supplies	11,224											
14	Contractual Services	9,362			(1,500)							(1,861)	
15	Contractual Services- Testing	16,955								12,094			
16	Contractual Services - Other	553,043			(7,641)							(26,580)	
17	Equipment Rental	1,863											
18	Rents - Building	19,830									18,432		
19	Transportation Expenses	34,445											
20	Insurance - General Liability	18,704											
21	Insurance - Other	990											
22	Regulatory Commission Expense	60,000											
23	Miscellaneous Expense	20,845											
24	Bad Debt Expense	11,962											2,412
25	Scottsdale Capacity (Operating Lease)	164,522											
26	Amort. of Additional Scottsdale Cap.	48,629											
27	Depreciation and Amortization	224,818	19,168										
28	Taxes Other Than Income	(1,780)											
29	Property Taxes	32,414		285									
30	Income Tax	7,760											
31													
32	**Total Operating Expenses**	$ 1,664,655	$ 19,168	$ 285	$ (9,141)	$ 2,509	$ 615	$ 3,191	$ 133	$ 12,094	$ 18,432	$ (28,441)	$ 2,412
33	**Operating Income**	$ (84,485)	$ (19,168)	$ (285)	$ 9,141	$ (2,509)	$ (615)	$ (3,191)	$ (133)	$ (12,094)	$ (18,432)	$ 28,441	$ (2,412)
34	**Other Income (Expense)**												
35	Interest Income	-											
36	Other Income	-											
37	Interest Expense	(67,693)											
38	Other Expense	-											
39													
40	**Total Other Income (Expense)**	$ (67,693)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
41	**Net Profit (Loss)**	$ (152,178)	$ (19,168)	$ (285)	$ 9,141	$ (2,509)	$ (615)	$ (3,191)	$ (133)	$ (12,094)	$ (18,432)	$ 28,441	$ (2,412)
42													
43	SUPPORTING SCHEDULES:												
44	Rebuttal C-2												
45													
46													

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Income Statement

Exhibit
Rebuttal Schedule C-1
Page 2.2
Witness: Bourassa

Line No.		Direct Adjusted Test Year Book Results	Continued From Page 2.1 12 Meals Beverages Contributions	13 Contractual Services	14 Taxes Other Than Income	15 Expense Allocation	16 Contractual Services	17 Rate Case Expense	18 Interest Synch.	19 Income Tax	Rebuttal Test Year Adjusted Results	Rebuttal Proposed Rate Increase	Rebuttal Adjusted with Rate Increase
1	**Revenues**												
2	Flat Rate Revenues	$ 1,557,337									$ 1,557,337	$ 961,338	$ 2,518,675
3	Measured Revenues	15,917									15,917		15,917
4	Other Wastewater Revenues	6,916									6,916		6,916
5		$ 1,580,170	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ 1,580,170	$ 961,338	$ 2,541,508
6	**Operating Expenses**												
7	Salaries and Wages	$ -									$ -		$ -
8	Purchased Wastewater Treatment	335,255									338,381		338,381
9	Sludge Removal Expense	706									706		706
10	Purchased Power	54,690									54,690		54,690
11	Fuel for Power Production	928									928		928
12	Chemicals	37,489									40,813		40,813
13	Materials and Supplies	11,224									11,224		11,224
14	Contractual Services	9,362	(1,485)	42,200							46,716		46,716
15	Contractual Services- Testing	16,955									29,049		29,049
16	Contractual Services - Other	553,043				1,490	(6,284)				514,028		514,028
17	Equipment Rental	1,863									1,863		1,863
18	Rents - Building	19,830									38,262		38,262
19	Transportation Expenses	34,445									34,445		34,445
20	Insurance - General Liability	18,704									18,704		18,704
21	Insurance - Other	990									990		990
22	Regulatory Commission Expense	60,000						16,667			76,667		76,667
23	Miscellaneous Expense	20,845									20,845		20,845
24	Bad Debt Expense	11,962									14,374		14,374
25	Scottsdale Capacity (Operating Lease)	164,522									164,522		164,522
26	Amort. of Additional Scottsdale Cap.	48,629									48,629		48,629
27	Depreciation and Amortization	224,818									243,986		243,986
28	Taxes Other Than Income	(1,780)			1,780						-		-
29	Property Taxes	32,414									32,700		32,700
30	Income Tax	7,760								(30,692)	(22,932)	371,066	348,134
31													-
32	**Total Operating Expenses**	$ 1,664,655	$ (1,485)	$ 42,200	$ 1,780	$ 1,490	$ (6,284)	$ 16,667	$ -	$ (30,692)	$ 1,709,590	$ 371,066	$ 2,080,656
33	**Operating Income**	$ (84,485)	$ 1,485	$ (42,200)	$ (1,780)	$ (1,490)	$ 6,284	$ (16,667)	$ -	$ 30,692	$ (129,420)	$ 590,272	$ 460,852
34	**Other Income (Expense)**												
35	Interest Income	-									-		-
36	Other Income	-									-		-
37	Interest Expense	(67,693)							(3,887)		(71,580)		(71,580)
38	Other Expense	-									-		-
39													
40	**Total Other Income (Expense)**	$ (67,693)	$ -	$ -	$ -	$ -	$ -	$ -	$ (3,887)	$ -	$ (71,580)	$ -	$ (71,580)
41	**Net Profit (Loss)**	$ (152,178)	$ 1,485	$ (42,200)	$ (1,780)	$ (1,490)	$ 6,284	$ (16,667)	$ (3,887)	$ 30,692	$ (201,001)	$ 590,272	$ 389,271
42													
43	SUPPORTING SCHEDULES:												
44	Rebuttal C-2												
45													
46													

RECAP SCHEDULES:
Rebuttal A-1

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustments to Revenues and Expenses

Exhibit
Schedule C-2
Page 1
Witness: Bourassa

Line No.		Adjustments to Revenues and Expenses						
		1 Depreciation Expense	2 Property Taxes	3 Expensed Plant	4 Scottsdale Treatment	5 Annualize WW Treatment	6 Chemicals Expense	Subtotal
6	Revenues							-
8	Expenses	19,168	285	(9,141)	2,509	616	3,191	16,629
10	Operating							
11	Income	(19,168)	(285)	9,141	(2,509)	(616)	(3,191)	(16,629)
13	Interest							-
14	Expense							-
15	Other							
16	Income /							-
17	Expense							
19	Net Income	(19,168)	(285)	9,141	(2,509)	(616)	(3,191)	(16,629)

		Adjustments to Revenues and Expenses						
		7 Ann. Chemicals Expense	8 Testing Expense	9 Rent Expense	10 Contractual Services	11 Bad Debt Expense	12 Meals, Beverages, Contributions	Subtotal
25	Revenues							-
27	Expenses	133	12,094	18,432	(28,441)	2,412	(1,485)	19,774
29	Operating							
30	Income	(133)	(12,094)	(18,432)	28,441	(2,412)	1,485	(19,774)
32	Interest							
33	Expense							-
34	Other							
35	Income /							-
36	Expense							
38	*Net Income*	(133)	(12,094)	(18,432)	28,441	(2,412)	1,485	(19,774)

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustments to Revenues and Expenses

Exhibit
Schedule C-2
Page 1 (Continued)
Witness: Bourassa

Line No.		Adjustments to Revenues and Expenses						
		13	14	15	16	17	18	Total
		Contractual Services	Taxes Other Tan Income	Expense Allocation	Contractual Services	Rate Case Exp.	Interest Synch.	
	Revenues							-
	Expenses	42,200	1,780	1,490	(6,284)	16,667		75,627
	Operating Income	(42,200)	(1,780)	(1,490)	6,284	(16,667)	-	(75,627)
	Interest Expense						(3,887)	(3,887)
	Other Income / Expense							-
	Net Income	(42,200)	(1,780)	(1,490)	6,284	(16,667)	(3,887)	(79,514)

		Adjustments to Revenues and Expenses						
		19	20	21	22	23	24	Subtotal
		Income Tax	Blank	Blank	Blank	Blank	Blank	
	Revenues							-
	Expenses	(30,692)						44,936
	Operating Income	30,692	-	-	-	-	-	(44,936)
	Interest Expense							(3,887)
	Other Income / Expense							-
	Net Income	30,692	-	-	-	-	-	(48,823)

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustments to Revenues and Expenses
Adjustment Number 1

Exhibit
Rebuttal Schedule C-2
Page 2
Witness: Bourassa

Line No.	Depreciation Expense			Proforma Adjustments						
			Adjusted Original	1	2	3	4	Rebuttal Adjusted Original	Proposed	Depreciation
	Acct. No.	Description	Cost	Unrecorded Plant	Plant Retirement	Expensed Plant	Odor Control Unit	Cost	Rates	Expense
5	351	Organization	-	-	-	-	-	-	0.00%	-
6	352	Franchises	-	-	-	-	-	-	0.00%	-
7	353	Land and Land Rights	461,300	-	-	-	-	461,300	0.00%	-
8	354	Structures and Improvements	2,557,920	-	-	2,300	-	2,560,220	3.33%	85,255
9	355	Power Generation Equipment	-	-	-	-	-	-	5.00%	-
10	360	Collection Sewers - Force	706,292	-	-	1,600	-	707,892	2.00%	14,158
11	361	Collection Sewers - Gravity	4,284,948	-	-	-	-	4,284,948	2.00%	85,699
12	362	Special Collecting Structures	-	-	-	-	-	-	2.00%	-
13	363	Services to Customers	198,723	-	-	-	-	198,723	2.00%	3,974
14	364	Flow Measuring Devices	31,512	-	-	-	-	31,512	10.00%	3,151
15	365	Flow Measuring Installations	179,622	-	-	-	-	179,622	10.00%	17,962
16	370	Receiving Wells	690,628	254,251	(13,208)	1,200	-	932,871	3.33%	31,065
17	371	Effluent Pumping Equipment	654,844	-	-	2,803	-	657,647	12.50%	82,206
18	380	Treatment and Disposal Equipment	143,578	-	-	-	38,625	182,203	5.00%	9,110
19	381	Plant Sewers	123,289	-	-	1,238	-	124,527	5.00%	6,226
20	382	Outfall Sewer Lines	-	-	-	-	-	-	3.33%	-
21	389	Other Plant and Misc. Equipment	939,432	-	-	-	-	939,432	6.67%	62,660
22	390	Office Furniture and Equipment	224,587	-	-	-	-	224,587	6.67%	14,980
23	391	Transportation Equipment	107,367	-	-	-	-	107,367	20.00%	21,473
24	393	Tools, Shop and Garage Equipment.	5,754	-	-	-	-	5,754	5.00%	288
25	394	Laboratory Equipment	7,488	-	-	-	-	7,488	10.00%	749
26	395	Power Operated Equipment	-	-	-	-	-	-	5.00%	-
27	396	Communication Equipment	40,451	-	-	-	-	40,451	10.00%	4,045
28	398	Other TangiblePlant	-	-	-	-	-	-	10.00%	-
29		TOTALS	$ 11,357,735	$ 254,251	$ (13,208)	$ 9,141	$ 38,625	$ 11,646,544		$ 443,002
30										
31	Less: Amortization of Contributions		$ 5,232,139					$ 5,232,139	3.8037%	$ (199,016)
32										
33	Total Depreciation Expense									$ 243,986
34										
35	Test Year Depreciation Expense									224,818
36										
37	Increase (decrease) in Depreciation Expense									19,168
38										
39	Adjustment to Revenues and/or Expenses									$ 19,168
40										
41	SUPPORTING SCHEDULE									
42	Rebuttal B-2, page 3									

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and/or Expenses
Adjustment Number 2

Exhibit
Rebuttal Schedule C-2
Page 3
Witness: Bourassa

Line No.		As Adjusted With Rate Incr.
1	Adjust Property Taxes to Reflect Proposed Revenues:	
2		
3	Adjusted Revenues in year ended 06/30/2008	$ 1,580,170
4	Adjusted Revenues in year ended 06/30/2008	1,580,170
5	Proposed Revenues	2,541,508
6	Average of three year's of revenue	$ 1,900,616
7	Average of three year's of revenue, times 2	$ 3,801,232
8	Add:	
9	Construction Work in Progess at 10%	$ 14,202
10	Deduct:	
11	Book Value of Transportation Equipment	59,592
12		
13	Full Cash Value	$ 3,755,842
14	Assessment Ratio	21%
15	Assessed Value	788,727
16	Property Tax Rate	4.1459%
17		
18	Computed Property Tax	32,700
19	Tax on Parcels	0
20		
21	Total Property Tax at Proposed Rates	$ 32,700
22	Property Taxes (Adjusted Direct and Adjusted Rebuttal)	32,414
23	Change in property taxes	$ 285
24		
25		
26	Adjustment to Revenues and/or Expenses	$ 285
27		
28		
29		
30		
31		
32		
33		

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and/or Expenses
Adjustment Number 3

Exhibit
Rebuttal Schedule C-2
Page 4
Witness: Bourassa

Line No.				
1	Expensed Plant			
2				Label
3	Contractual Services - Legal and Engineering	$	(1,500)	3a
4				
5	Contractual Services - Other	$	(7,641)	3b
6				
7				
8				
9				
10				
11				
12	Adjustment to Revenues and/or Expenses	$	(9,141)	
13				
14				
15				
16				
17	SUPPORTING SCHEDULES			
18	Staff Adj. #3 Schedule CSB-14			
19				
20				

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and/or Expenses
Adjustment Number 4

Exhibit
Rebuttal Schedule C-2
Page 5
Witness: Bourassa

City of Scottsdale Purchased Wastewater Treatment

Computation of Test Year Billings

Line No.	Month	Year	Read Date	Sewage Flow (in gals)	Cost per 1,000 gal	Raw Billing	Environmental 18.953%	Subject to Sales tax	Sales tax 1.65%	Scottsdale Billing
7	July	2007	1-Aug-07	6,126,317	$ 2.39	$ 14,641.90	$ 2,775.08	$ 17,416.98	$ 287.38	$ 17,704.36
8	Aug	2007	1-Sep-07	7,000,000	$ 2.39	$ 16,730.00	$ 3,170.84	$ 19,900.84	$ 328.36	$ 20,229.20
9	Sept	2007	1-Oct-07	8,507,019	$ 2.39	$ 20,331.78	$ 3,853.48	$ 24,185.26	$ 399.06	$ 24,584.31
10	Oct	2007	1-Nov-07	8,800,000	$ 2.39	$ 21,032.00	$ 3,986.19	$ 25,018.19	$ 412.80	$ 25,431.00
11	Nov	2007	1-Dec-07	8,703,535	$ 2.39	$ 20,801.45	$ 3,942.50	$ 24,743.95	$ 408.28	$ 25,152.22
12	Dec	2007	1-Jan-08	8,936,845	$ 2.39	$ 21,359.06	$ 4,048.18	$ 25,407.24	$ 419.22	$ 25,826.46
13	Jan	2008	1-Feb-08	9,500,000	$ 2.26	$ 21,470.00	$ 4,069.21	$ 25,539.21	$ 421.40	$ 25,960.61
14	Feb	2008	1-Mar-08	11,347,179	$ 2.26	$ 25,644.62	$ 4,860.43	$ 30,505.05	$ 503.33	$ 31,008.38
15	Mar	2008	1-Apr-08	11,644,059	$ 2.26	$ 26,315.57	$ 4,987.59	$ 31,303.16	$ 516.50	$ 31,819.67
16	April	2008	1-May-08	9,597,371	$ 2.26	$ 21,690.06	$ 4,110.92	$ 25,800.98	$ 425.72	$ 26,226.69
17	May	2008	1-Jun-08	7,261,758	$ 2.26	$ 16,411.57	$ 3,110.49	$ 19,522.06	$ 322.11	$ 19,844.17
18	June	2008	1-Jul-08	6,333,090	$ 2.26	$ 14,312.78	$ 2,712.70	$ 17,025.49	$ 280.92	$ 17,306.41
20	Test Year Totals			103,757,173		$ 240,740.79	$ 45,627.60	$ 286,368.40	$ 4,725.08	$ 291,093.48

Computation of Billings under rate change effecive (7/1/2009)

25	City of Scottsdale billing with new rate	103,757,173	$ 2.61	$ 270,806.22	$ 51,325.90	$ 322,132.12	$ 5,315.18	$ 327,447.30

27	Adjusted Test Year Wastewater Treatment Expenses (before annualization)	$ 324,938.13
29	Increase(decrease) in City of Scottsdale purchased wastewater treatment	$ 2,509.17
31	Adjustment to Revenues and/or Expenses	$ 2,509

SUPPORTING SCHEDULES
Direct Schedule C-2, page 7

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and/or Expenses
Adjustment Number 5

Exhibit
Rebuttal Schedule C-2
Page 6
Witness: Bourassa

Line No.			
1	Annualize Purchased Wastewater Treatment		
2			
3	Adjusted Year Purchased Wastewater Treatment (Scottsdale)	$	327,447
4	Gallons Treated By Scottsdale (in 1000's)		103,757
5	Cost per 1,000 gallons	$	3.1559
6			
7	Additional Wasterwater gallons (in 1,000's) from revenue annualization		451
8	Percent diverted to Scottsdale		70.94%
9	Additonal gallons treated by Scottsdale (in 1,000's)		320
10			
11	Annualization of Purchased WW Treatment per Rebuttal	$	1,010
12			
13	WW Treatment Annualization per Direct	$	394
14			
15	Increase (decrease) in annualization	$	616
16			
17			
18	Adjustment to Revenue and/or Expense	$	616
19			
20			
21			
22	SUPPORTING SCHEDULE		
23	Rebuttal C-2, page 5		
24	Direct C-2, page 8		
25			
26			
27			

Black Mountain Sewer Corporation
Test Year Ended December 31, 2001
Adjustment to Revenues and/or Expenses
Adjustment Number 6

Exhibit
Rebuttal Schedule C-2
Page 7
Witness: Bourassa

Line No.					
1					
2	Chemicals Expense				
3					
4	Thoigard used from July to November 2007			$	8,169
5	Sodium Hydroxide (ordor control chemical)				
6	Gallons used during test year (approx. 7 months)		6,997		
7	Cost per Gallons	$	1.65		
8	Cost of Sodium Hydroxide			$	11,545
9	Delivery costs (14 deliveries at $45 per)				630
10	Sales tax at 8.5%				1,035
11	Total Cost			$	21,378
12					
13					
14	Sodium Hydroxide (ordor control chemical)				
15	*Projected gallons (test year gallons annualized to 12 months)*		11,995		
16	Cost per Gallons	$	2.05		
17	Total Cost			$	24,590
18	Delivery costs (24 deliveries at $32 per)				768
19	Sales tax at 8.5%				2,155
20	Total Cost			$	27,513
21					
22					
23	Increase (decrease) in Chemicals Expense per Rebuttal			$	6,135
24					
25	Increase (decrease) in Chemicals Expense per Direct			$	2,943
26					
27	Rebuttal Increase (decrease) in Chemicals Expenses			$	3,191
28					
29					
30	Adjustment to Revenue and/or Expense			$	3,191
31					
32					
33					
34					
35					
36	SUPPORTING SCHEDULE				
37	RUCO Adj. #8 SCHEDULE RLM-13				
38					
39					

Black Mountain Sewer Corporation
Test Year Ended December 31, 2001
Adjustment to Revenues and/or Expenses
Adjustment Number 7

Exhibit
Rebuttal Schedule C-2
Page 8
Witness: Bourassa

Line No.			
1			
2	Annualize Chemicals Expense		
3			
4	Test Year Chemicals plus Adjustment #6	$	49,584
5	Gallons Treated By BMSC (in 1000's)		42,510
6	Cost per 1,000 gallons	$	1.17
7			
8	Additonal Wasterwater gallons (in 1,000's) from revenue annualization		451
9			
10	Additonal cost based on revenue annualization per Rebuttal	$	526
11			
12	Additonal cost based on revenue annualization per Direct	$	394
13			
14			
15	Rebuttal Increase (decrease) in Chemicals Expense	$	133
16			
17			
18			
19			
20	Adjustment to Revenue and/or Expense	$	133
21			
22			
23			

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 8

Exhibit
Rebuttal Schedule C-2
Page 9
Witness: Bourassa

Line No.			
1			
2	Testing Expense		
3			
4	Revised Test Year Test Year	$	15,689
5			
6	Incremental Costs Required By City of Scottsdale	$	13,360
7			
8	Total Proposed testing cost per Rebuttal	$	29,049
9			
10	Testing Costs per Direct	$	16,955
11			
12	Increase (decrease) in Testing Costs	$	12,094
13			
14	Adjustment to Revenue and/or Expense	$	12,094
15			
16			
17			
18	SUPPORTING SCHEDULES		
19	Rebuttal C-2, page 9.1		
20			

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment Number 8

Exhibit
Rebuttal Schedule C-2
Page 9.1

Line No.	Testing Costs	Test Year Costs			City of Scottsdale Incremental	Co. Recommended Costs			Staff Recommended
	Test name or number	Tests/yr	Price/test	Yearly Total	Tests	Tests/yr	Price/test	Yearly Total	Cost
7	515- chemical water test	2	$ 175	$ 350		2	$ 175	$ 350	$ 350
8	525- chemical water test	2	$ 290	$ 580		2	$ 290	$ 580	$ 580
9	624- chemical water test	3	$ 160	$ 480		2	$ 160	$ 320	$ 320
10	Antimony, GFAA	3	$ 15	$ 44		4	$ 15	$ 58	$ -
11	Antimony, Total	1	$ 17	$ 17		4	$ 17	$ 67	$ 67
12	Arsenic, GFAA	3	$ 15	$ 44	16	20	$ 15	$ 290	$ -
13	Arsenic, Total	1	$ 17	$ 17		4	$ 17	$ 67	$ 67
14	Barium, total	2	$ 10	$ 20		4	$ 10	$ 40	$ 40
15	Barium, total	2	$ 10	$ 19		4	$ 10	$ 38	$ -
16	Beryllium, total	2	$ 10	$ 20		4	$ 10	$ 40	$ 40
17	Beryllium, total	2	$ 10	$ 19	16	20	$ 10	$ 192	$ -
18	BOD	59	$ 36	$ 2,124	0	52	$ 36	$ 1,872	$ 1,008
19	Cadmium GFAA	2	$ 14	$ 29	16	20	$ 14	$ 288	$ -
20	Cadmium GFAA	1	$ 15	$ 15		4	$ 15	$ 60	$ 60
21	Cadmium Total	1	$ 17	$ 17		4	$ 17	$ 66	$ -
22	Chromium, Total	2	$ 10	$ 20		4	$ 10	$ 40	$ 40
23	Chromium, Total	2	$ 10	$ 19	16	20	$ 10	$ 192	$ -
24	Cyanide,	4	$ 56	$ 224		4	$ 56	$ 224	$ 224
25	Cyanide, Total	4	$ 44	$ 176	16	20	$ 44	$ 880	$ -
26	Fecal Coliforms	259	$ 15	$ 3,885		255	$ 15	$ 3,825	$ 5,475
27	Fecal Coliforms, Soil/Sludge	10	$ 68	$ 680		10	$ 68	$ 680	$ -
28	Mercury	4	$ 32	$ 128	16	20	$ 32	$ 640	$ 128
29	Nickel, Total	2	$ 10	$ 19	16	20	$ 10	$ 192	$ -
30	Nickel, Total	2	$ 10	$ 20		4	$ 10	$ 40	$ 40
31	Nitrogen 2	12	$ 64	$ 768		12	$ 64	$ 768	$ -
32	Nitrogen 3	12	$ 52	$ 624		12	$ 52	$ 624	$ 624
33	Nitrogen, NO3NO2	24	$ 20	$ 480	28	52	$ 20	$ 1,040	$ -
34	Nitrogen, Nitrite	2	$ 12	$ 24		2	$ 12	$ 24	$ -
35	Nitrogen, Total Kjeldahl	24	$ 32	$ 768	28	52	$ 32	$ 1,664	$ -
36	Oil and Grease	35	$ 88	$ 3,080		28	$ 88	$ 2,464	$ -
37	Flouride	4	$ 16	$ 64	16	20	$ 16	$ 320	$ 64
38	ICP Digestion	4	$ 16	$ 64		4	$ 16	$ 64	$ 16
39	ICP-MS Digestion	1	$ 16	$ 16		1	$ 16	$ 16	$ 15
40	Lead GFAA	1	$ 15	$ 15		4	$ 15	$ 60	$ 60
41	Lead GFAA	2	$ 14	$ 29	16	20	$ 14	$ 288	$ -
42	Lead, Total	1	$ 17	$ 17		4	$ 17	$ 67	$ -
43	Ph	24	$ 12	$ 288		24	$ 12	$ 288	$ -
44	Selenium GFAA	1	$ 15	$ 15		4	$ 15	$ 60	$ 60
45	Selenium GFAA	1	$ 14	$ 14	16	20	$ 14	$ 288	$ -
46	Selenium Total	1	$ 17	$ 17		4	$ 17	$ 67	$ -
47	Selenium- Subcontract	1	$ 24	$ 24		1	$ 24	$ 24	$ -
48	Thallium GFAA	2	$ 14	$ 29		4	$ 14	$ 58	$ -
49	Thallium GFAA	1	$ 15	$ 15		4	$ 15	$ 60	$ 60
50	Thallium Total	1	$ 17	$ 17		4	$ 17	$ 67	$ -
51	Boron				16	16	$ 9	$ 144	
52	COD				84	84	$ 38	$ 3,192	
53	Copper				16	16	$ 9	$ 144	
54	VOC GC/MS 624				2	2	$ 320	$ 640	
55	VOC GC/MS 625				2	2	$ 312	$ 624	
56	VOC GC/MS 608				2	2	$ 160	$ 320	
57	Molybdenum				16	16	$ 9	$ 144	
58	Silver				16	16	$ 14	$ 224	
59	Nitrate - N				28	28	$ 32	$ 896	
60	Nitrite - N				28	28	$ 32	$ 896	
61	TDS				84	84	$ 12	$ 1,008	
62	Zinc				16	16	$ 9	$ 144	
63	Total Suspended Solids	46	$ 12	$ 552	56	84	$ 12	$ 1,008	$ -
64	Total Suspended Solids	13	$ 13	$ 169		24	$ 13	$ 312	$ 364
65	Enteric Virus monthly					0	$ 460	$ -	$ 5,520
66	Unknown Cost								
67				Company				Company	Staff
68	Total	588		$ 16,053	582	1201		$ 29,049	15,222 [1]
69									
70	Total Recommended							$ 29,049	
71	Original Filing test year costs							$ 16,955	
72	Increase (decrease) in Test Year Testing Costs							$ 12,094	
73									
74	Reconciliation								
75	Testing Costs Per Direct							$ 16,955	
76	Less: Costs outside test year							$ (1,266)	
77	Adjusted Test Year Costs							$ 15,689	
78	Incremental COS tests required by City of Scottsdale							$ 13,360	
79	Rebuttal Testing Costs							$ 29,049	
80									

81 1 Staff Schedule contains a math error of $860.

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 9

Exhibit
Rebuttal Schedule C-2
Page 10
Witness: Bourassa

Line No.			
1			
2	Rent Expense		
3			
4	Additional Test Year Rent Expense	$	18,432
5			
6			
7			
8			
9	Adjustment to Revenue and/or Expense	$	18,432
10			
11			
12			
13			
14			
15			
16	SUPPORTING SCHEDULE		
17	RUCO Adj. # 6 Schedule RLM-12		
18			
19			
20			

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 10

Exhibit
Rebuttal Schedule C-2
Page 11
Witness: Bourassa

Line No.				
1				
2	Normalization of Maintenance, Legal and Engineering			
3				
4				Label
5	Contractual Services - Other	$	(26,580)	10a
6				
7	Contractual Services - Legal and Engineering		(1,861)	10b
8				
9	Total	$	(28,441)	
10				
11				
12	Adjustment to Revenue and/or Expense	$	(28,441)	
13				
14				
15				
16				
17	SUPPORTING SCHEDULE			
18	Staff Adj. # 4 Schedule CSB-15 (corrected for errors - see testimony)			
19				
20				

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 11

Exhibit
Rebuttal Schedule C-2
Page 12
Witness: Bourassa

Line No.			
1			
2	Bad Debt Expense		
3			
4			
5	Remove Write-offs from prior year revenues (per Staff Adj. #5)	$	(4,067)
6			
7	Write-offs for test year revenues occuring post test year		6,479
8			
9	Total	$	2,412
10			
11			
12	Adjustment to Revenue and/or Expense	$	2,412
13			
14			
15			
16			
17	SUPPORTING SCHEDULE		
18	Staff Adj. # 5 Schedule CSB-16		
19	Testimony		
20			

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 12

Exhibit
Rebuttal Schedule C-2
Page 13
Witness: Bourassa

Line No.			
1			
2	Remove Meals, Beverages, Charitable Contributions		
3			
4			
5	Meals (per Staff Adj. # 9 Schedule CSB-20)	$	(526)
6			
7	Beverages (per Staff Adj. # 9 Schedule CSB-20)		(907)
8			
9	Charitable Contributions(per Staff Adj. # 9 Schedule CSB-20)		(52)
10			
11	Total Adjustment to Contractual Services - Other	$	(1,485)
12			
13			
14	Adjustment to Revenue and/or Expense	$	(1,485)
15			
16			
17			
18			
19			
20			

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 13

Exhibit
Rebuttal Schedule C-2
Page 14
Witness: Bourassa

Line No.			
1			
2	Contractual Services		
3			
4			
5	Contractual Services Costs[1] (per RUCO Adj. #5 Schedule RLM-12)	$	42,200
6			
7			
8			
9			
10			
11			
12	Adjustment to Revenue and/or Expense	$	42,200
13			
14			
15			
16			
17			
18	[1]BMSC cost incorrectly recorded on books of LPSCo. See testimony.		
19			
20			

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 14

Exhibit
Rebuttal Schedule C-2
Page 15
Witness: Bourassa

Line No.			
1			
2	Taxes Other Than Income		
3			
4			
5	Remove negative expense	$	1,780
6			
7			
8			
9			
10			
11			
12	Adjustment to Revenue and/or Expense	$	1,780
13			
14			
15			
16			
17	SUPPORTING SCHEDULES		
18	Staff Adj. #11 Schedule CSB-22		
19			
20			

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 15

Exhibit
Rebuttal Schedule C-2
Page 16
Witness: Bourassa

Cental Office Costs - Infrastructure Allocation

Line No.		Actual Total Cost Pool[1]	Adjustments	Rebuttal Total Cost Pool	Utility Infrastructure Group Allocation %	Utility Infrastructure Group Allocated Cost Pool	BMSC Allocation by Customer Count	Rebuttal BMSC Allocation
7	Audit	$ 940,719		$ 940,719	26.98%	$ 253,845	3.18%	8,072
8	Tax Services	235,582		$ 235,582	26.98%	63,570	3.18%	2,022
9	Legal	485,980		$ 485,980	26.98%	131,138	3.18%	4,170
10	Other Professional Services	177,762		$ 177,762	26.98%	47,968	3.18%	1,525
11	Management Fee - Total	629,738		$ 629,738	26.98%	169,929	3.18%	5,404
12	Unit Holder Communications	196,509		$ 196,509	26.98%	53,026	3.18%	1,686
13	Trustee Fees	225,052		$ 225,052	26.98%	60,728	3.18%	1,931
14	Escrow & Transfer Agent Fees	61,115		$ 61,115	26.98%	16,491	3.18%	524
15	Rent	295,881		$ 295,881	26.98%	79,841	3.18%	2,539
16	Licenses/Fees & Permits	131,619	(128,380) [1]	$ 3,239	26.98%	874	3.18%	28
17	Office Expenses	726,427	(63,448) [1]	$ 662,979	26.98%	178,899	3.18%	5,689
18	Depreciation	218,613		$ 218,613	26.98%	58,991	3.18%	1,876
19								
20	**Total (Candadian dollars CAD)**	**$ 4,324,998**	**$ (191,828)**	**$ 4,133,170**		**$ 1,115,300**		**$ 35,467**
21	Factor	1.05	1.05	1.05		1.05		1.05
22	**Total (US dollars USD**	$ 4,119,045	$ (182,693)	$ 3,936,352		$ 1,062,190		$ 33,778
23								
24	Infrastructure Cost Allocation per Direct (USD)[2]							$ 32,287
25								
26	Increase (decrease) in Infrastructure Allocated Costs (USD)							$ 1,490
27								
28								
29	Adjustment to Revenues and/or Expenses							$ 1,490
30								
31	[1] Per Response to CSB 9.1 (in Canadian dollars)							
32	[2] $3,950,800 budgeted allocation pool times 26.98% times 3.18% divided by 1.05							
33								

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 16

Exhibit
Rebuttal Schedule C-2
Page 17
Witness: Bourassa

Line No.				
1				
2				
3	Contractual Services			
4				
5	Increase in direct allocated Operations costs		$	3,474
6				
7	Increase in allocated Accounting/Billing costs	$ 254,381		
8	Allocation Factor based on Year-end Customers	3.18%		
9			$	8,098
10	Increase in allocated Overhead costs	717,339		
11	Allocation Factor based on 4-factor allocation	4.52%		
12			$	32,446
13				
14	Increase (decrease) in Contractual Services per Rebuttal		$	44,018
15				
16	Increase (decrease) in Contractual Services per Direct			50,302
17				
18	Increase (decrease) in Contractual Services		$	(6,284)
19				
20				
21	Adjustment to Revenue and/or Expense		$	(6,284)
22				
23				

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 17

Exhibit
Rebuttal Schedule C-2
Page 18
Witness: Bourassa

Line No.			
1			
2	Rate Case Expense		
3			
4	Rate Case Expense Request per Direct	$	180,000
5			
6	Additional Rate Case Expense		50,000
7			
8	Rate Case Expense Request per Rebuttal	$	230,000
9			
10			
11	Amortization Period (years)		3.00
12			
13			
14	Rate Case Expense to be included in Expense	$	76,667
15			
16	Rate Case Expense per Direct	$	60,000
17			
18	Increase (decrease) in Rate Case Expense	$	16,667
19			
20			
21	Adjustment to Revenue and/or Expense	$	16,667

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and Expenses
Adjustment Number 18

Exhibit
Rebuttal Schedule C-2
Page 19
Witness: Bourassa

Line No.			
1	Interest Synchronization		
2			
3			
4	Fair Value Rate Base	$3,716,649	
5	Weighted Cost of Debt	1.93%	
6	Interest Expense		$ 71,580
7			
8	Test Year Interest Expense		$ 67,693
9			
10	Increase (decrease) in Interest Expense		3,887
11			
12			
13			
14	Adjustment to Revenue and/or Expense		$ (3,887)
15			
16			
17	Weighted Cost of Debt Computation		

18						Weighted
19			Amount	Percent	Cost	Cost
20	Debt	$	1,010,649	20.49%	9.40%	1.93%
21	Equity	$	3,922,058	79.51%	12.40%	9.86%
22	Total	$	4,932,707	100.00%		11.79%
23						
24						

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Adjustment to Revenues and/or Expenses
Adjustment Number 19

Exhibit
Rebuttal Schedule C-2
Page 20
Witness: Bourassa

Line No.			Test Year Adjusted *Results*	Adjusted with Rate *Increase*	
1	Income Tax Computation				
2					
3					
4					
5					
6					
7	Taxable Income before Scottsdale Operating Lease		$ (223,932)	$ 737,405	
8	Plus: Scottsdale Operating Lease		164,522	164,522	
9	Taxable Income		$ (59,410)	$ 901,927	
10					
11	Income Before Taxes			$ 901,927	
12					
13	Arizona Income Before Taxes			$ 901,927	
14					
15	Less Arizona Income Tax			$ 62,846	
16	Rate =	6.968%			
17	Arizona Taxable Income			$ 839,081	
18					
19	Arizona Income Taxes			$ 62,846	
20					
21	Federal Income Before Taxes			$ 901,927	
22					
23	Less Arizona Income Taxes			$ 62,846	
24					
25	Federal Taxable Income			$ 839,081	
26					
27					
28					
29	FEDERAL INCOME TAXES:				
30	15% BRACKET			$ 7,500	
31	25% BRACKET			$ 6,250	
32	34% BRACKET			$ 8,500	Federal
33	39% BRACKET			$ 91,650	Effective
34	34% BRACKET			$ 171,388	Tax
35					Rate
36	Federal Income Taxes			$ 285,288	31.63%
37					
38	State Income Tax Rate at Proposed Rates		6.9680%		
39	Federal Effective Tax Rate at Proposed Rates		31.6309%		
40	Total Federal and State Income Tax Effective Rate		38.5989%	$ 348,134	
41					
42	Taxable Income		$ (59,410)		
43	State and Federal Income Taxes at Effective Rate		$ (22,932)		
44	Adjusted Test Year Income Tax per Direct		$ 7,760		
45	Adjusted Test Year Income Tax per Rebuttal			(22,932)	
46	Increase (decrease) in Income Taxes	→	$ (30,692)	371,066	
47					

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Computation of Gross Revenue Conversion Factor

Exhibit
Rebuttal Schedule C-3
Page 1
Witness: Bourassa

Line No.	Description	Percentage of Incremental Gross Revenues
1	Federal Income Tax Factor	31.6309%
2		
3	State Income Tax Factor	6.9680%
4		
5	*Other Tax Factor*	0.0000%
6		
7		
8	Total Tax Percentage	38.5989%
9		
10	Operating Income % = 100% - Tax Percentage	61.4011%
11		
12		
13		
14		
15	1 = Gross Revenue Conversion Factor	
16	Operating Income %	1.6286
17		
18	SUPPORTING SCHEDULES:	RECAP SCHEDULES:
19		Rebuttal A-1
20		

Black Mountain Sewer Corporation
Revenue Summary
With Annualized Revenues to Year End Number of Customers
Test Year Ended June 30, 2008

Exhibit
Rebuttal Schedule H-1
Witness: Bourassa

Line No.	Customer Classification	Present Revenues	Proposed Revenues	Dollar Change	Percent Change	Percent of Present Sewer Revenues	Percent of Proposed Sewer Revenues
1	Residential	1,077,880	1,711,052	633,172	58.74%	68.59%	67.60%
2	Commercial (Standard Rate)	378,678	601,150	222,472	58.75%	24.10%	23.75%
3	Commercial (Special Rate)						
4	Boulders Resort	50,085	102,290	52,205	104.23%	3.19%	4.04%
5	Desert Forest	13,729	24,400	10,671	77.73%	0.87%	0.96%
6	El Pedegral	26,587	55,030	28,443	106.98%	1.69%	2.17%
7	Boulders Club	168	349	180	106.98%	0.01%	0.01%
8	Spanish Village	8,395	17,377	8,981	106.98%	0.53%	0.69%
9	Effluent Sales	15,917	19,578	3,661	23.00%	1.01%	0.77%
10	Subtotal	1,571,439	2,531,224	959,785	61.08%	100.00%	100.00%
11							
12	Revenue Annualization						
13	Residential	2,145	3,405	1,260	58.74%	0.14%	0.13%
14							
15	Misc Service Revenues						
16	Misc Revenues	6,915	6,915	-	0.00%	0.44%	0.27%
17	Reconciling Amount to C-1	(329)	(36)	293	-89.06%	-0.02%	0.00%
18	Totals	1,580,170	2,541,508	961,338	60.84%	99.98%	100.00%
19							
20							
21							
22							
23							
24							
25							

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Analysis of Revenue by Detailed Class
Special Rate Commercial Customers Pay Standard Commerical Rate

Rebuttal Schedule H-2
Page 1
Witness: Bourassa

Line No.	Customer Classification	Average Number of Customers at 6/30/2008	Average Effluent	Average Bill Present Rates	Average Bill Proposed Rates	Proposed Increase Dollar Amount	Proposed Increase Percent Amount
1	Residential	1,972	N/A	$ 45.64	$ 72.45	$ 26.81	58.742%
2	Commercial (Standard Rate)	124	N/A	103.41	164.16	60.75	58.750%
3	Commercial (Special Rate)						
4	B-H Enterprises (West)	-	N/A	$ -	N/A		
5	B-H Enterprises (East)	1	N/A	-	N/A		
6	Barb's Per Grooming	-	N/A	-	N/A		
7	Boulders Resort	1	N/A	4,173.74	8,524.14	4,350.40	104.233%
8	Carefree Dental	-	N/A	-	N/A		
9	Ridgecrest Realty	1	N/A	-	N/A		
10	Desert Forest	1	N/A	1,144.08	2,033.36	889.28	77.729%
11	Desert Hills Pharmacy	1	N/A	-	N/A		
12	El Pedregal	1	N/A	2,215.55	4,585.81	2,370.26	106.983%
13	Lemon Tree	1	N/A	-	N/A		
14	Body Shop	1	N/A	-	N/A		
15	Spanish Village	-	N/A	-	0.29048		
16	Boulders Club	-	N/A	168.41	348.58	180.17	106.983%
17	Anthony Vuitaggio	1	N/A	-	N/A		
18							
19	Effluent	1	3,542,780	$ 1,326.42	$ 1,631.49	305.08	23.000%
20							
21	Total	2,106					
22							
23							
24							
25							

Black Mountain Sewer Corporation
Present and Proposed Rates
Test Year Ended June 30, 2008

Exhibit
Rebuttal Schedule H-3
Page 1
Witness: Bourassa

Line No.	Customer Classification		Present Rates		Present Rates		Proposed Rates		Proposed Rates	Percent Change
1										
2										
3										
4	**Monthly Charge for:**									
5	Residential				$ 45.64				$ 72.45	58.74%
6	Commercial (Standard Rate), per gallon per day[1]				0.18298				0.29048	58.75%
7			per acre foot				per acre foot			
8	Effluent Sales (per 1,000 gallons)		$ 122.00		0.37440		$ 150.00		0.46051	23.00%
9										
10	Commercial (Special Rate), per gallon per day[1]									
11		Gallons		Monthly	Rate per		Monthly		Rate per	Percent
12	Customer[2]	Per Day[1]		Billing	Gallon		Billing		Gallon [2]	Change
13	B-H Enterprises	2,525	$	354.36	0.14034		N/A		N/A	
14	B-H Enterprises	1,400	$	196.48	0.14034		N/A		N/A	
15	Barb's Per Grooming	250	$	35.09	0.14034		N/A		N/A	
16	Boulders Resort	29,345	$	4,173.74	0.14223	$	8,524.14		0.29048	104.23%
17	Carefree Dental	1,625	$	228.05	0.14034		N/A		N/A	
18	Ridgecrest Realty	450	$	63.87	0.14193		N/A		N/A	
19	Desert Forest	7,000	$	1,144.08	0.16344	$	2,033.36		0.29048	77.73%
20	Desert Hills Pharmacy	800	$	136.49	0.17061		N/A		N/A	
21	El Pedregal	15,787	$	2,215.55	0.14034	$	4,585.81		0.29048	106.98%
22	Lemon Tree	300	$	41.07	0.13691		N/A		N/A	
23	Body Shop	1,000	$	176.47	0.17647		N/A		N/A	
24	Spanish Village	4,985	$	699.59	0.14034	$	1,448.04		0.29048	106.98%
25	Boulders Club	1,200	$	168.41	0.14034	$	348.58		0.29048	106.98%
26	Anthony Vultaggio	300	$	46.79	0.15597		N/A		N/A	
27										
28										

29 [1] Commercial wastewater flows are based on the average daily flows set forth in Engineering Bulletin 12, Table 1
30 published by the Arizona Department of Environmental Quality
31 [2] Company is proposing to set the special rate commercial customers at the same rate ase the standard commerical rate
32 customers.

Black Mountain Sewer Corporation
Present and Proposed Rates
Test Year Ended June 30, 2008

Exhibit
Rebuttal Schedule H-3
Page 2
Witness: Bourassa

Line No.	Other Service Charges	Present Rates	Proposed Rates
1	Establishment	$ 25.00	$ 25.00
2	Re-Establishment	$ 25.00	$ 25.00
3	Reconnection	no charge	[5]
4	After hours service	N/A	$ 25.00
5	Min Deposit Requirement (Residential)	[1]	[1]
6	Min Deposit Requirement (Non-Residential)	[1]	[1]
7	NSF Check	10.00	10.00
8	Deferred Payment finance charge, Per Month	1.50%	1.50%
9	Late Payment Charge, Per Month	1.50%	1.50%
10	Main Extension Tariff [2]	Cost	Cost
11	*Purchased Wastewater Surcharge*	NT	[3]
12	Hook-Up Fee for New Service Connections (per Gallon per Day)[4]	NT	$ 8.00
13			
14	[1] Per A.C.C. R14-2-603B Residential - two times the average bill. Non-residential - two and one-half times the average bill.		
15			
16	[2] Per A.C.C. R14-2-606(B)		
17			
18	[3] For increases in wastewater treatment costs from City of Scottsdale. See Testimony of Thomas J. Bourassa.		
19			
20	[4] Commercial wastewater flows are based on the average daily flows set forth in *Engineering Bulletin 12, Table 1*		
21	published by the Arizona Department of Environmental Quality. For wastewater treatment capacity constructed or		
22	purchased. See tariff for details.		
23			
24	[5] Actual cost of physical disconnection and reconnection (if same customer) and there shall be no charge if there		
25	is no physical work performed.		
26			
27	IN ADDITION TO THE COLLECTION OF REGULAR RATES, THE UTILITY WILL COLLECT FROM		
28	ITS CUSTOMERS A PROPORTIONATE SHARE OF ANY PRIVILEGE, SALES, USE, AND FRANCHISE		
29	TAX. PER COMMISSION RULE (14-2-608.D 5).		
30	ALL ADVANCES AND/OR CONTRIBUTIONS ARE TO INCLUDE LABOR, MATERIALS, OVERHEADS,		
31	AND ALL APPLICABLE TAXES, INCLUDING ALL GROSS-UP TAXES FOR INCOME TAXES.		
32	COST TO INCLUDE LABOR, MATERIALS AND PARTS, OVERHEADS AND ALL APPLICABLE TAXES.		
33			

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BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF BLACK MOUNTAIN SEWER CORPORATION, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO: SW-02361A-08-0609

REBUTTAL TESTIMONY OF

THOMAS J. BOURASSA

(Cost of Capital)

October 20, 2009

TABLE OF CONTENTS

2239523/16040.035

I. INTRODUCTION AND PURPOSE OF TESTIMONY.

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Thomas J. Bourassa. My business address is 139 W. Wood Drive, Phoenix, Arizona 85029.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. On behalf of the applicant, Black Mountain Sewer Corporation ("BMSC" or the "Company").

Q. ARE YOU THE SAME THOMAS J. BOURASSA THAT FILED DIRECT AND REBUTTAL TESTIMONY ON RATE BASE, INCOME STATEMENT, REVENUE REQUIREMENT AND RATE DESIGN IN THIS CASE?

A. Yes. My background and qualifications are discussed in my direct testimony on those aspects of the case.

Q. DID YOU ALSO PREPARE DIRECT TESTIMONY ON THE COST OF CAPITAL ON BEHALF OF BMSC IN THIS CASE?

A. Yes, I also provided direct testimony on the cost of capital, including the cost of equity, in this case.

II. SUMMARY OF REBUTTAL TESTIMONY AND THE PROPOSED COST OF CAPITAL FOR THE COMPANY.

A. Summary of Company's Rebuttal Recommendation.

Q. WHAT IS THE PURPOSE OF THIS REBUTTAL TESTIMONY?

A. In this portion of my rebuttal testimony I will provide updates of my cost of capital analysis and recommended rate of return using more recent financial data. I also will respond as appropriate to the direct testimonies of Mr. Manrique on behalf of Staff and the direct testimony of Mr. William A. Rigsby on behalf of RUCO.

Q. PLEASE SUMMARIZE YOUR UPDATED COST OF CAPITAL ANALYSIS.

A. Since the Company's direct filing, the cost of equity has increased substantially, as indicated by the Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"). The table below summarizes the results of my updated analysis using those models:

	Range	Midpoint
DCF Constant Growth (earnings growth)	10.0% - 15.3%	12.6%
DCF Constant Growth (sustainable growth)	9.5% - 11.8%	10.7%
Two-Stage Growth Model	9.9% - 13.8%	11.9%
DCF Average Results	**9.8% - 13.6%**	**11.7%**
CAPM Historical Market Risk Premium		8.5%
CAPM Current Market Risk Premium		17.8%
Average CAPM Results	**8.5%-17.8%**	**13.2%**
Average Overall Results	**9.2%-15.7%**	**12.4%**

The schedules containing my updated cost of capital analysis are included with my rebuttal schedules, attached to my other rebuttal testimony. Attached to this testimony are four attachments, which are discussed below.

I also prepared rebuttal testimony that addresses the Company's rebuttal rate base, its income statement (revenue and operating expenses), its required increase in revenue, and its rate design and proposed rates and charges for service. For the convenience of the Commission and the parties, that volume of my testimony has been filed separately in this case.

Q. PLEASE SUMMARIZE YOUR RECOMMENDED REBUTTAL COST OF DEBT AND EQUITY, AND YOUR RECOMMENDED REBUTTAL RATE OF RETURN ON RATE BASE.

A. The Company's recommended capital structure consists of 0 percent debt and 100 percent common equity as shown on Rebuttal Schedule D-1. While the Company

has long-term debt, the debt service is being treated as an operating lease and is therefore excluded from the capital structure for purposes of computing a weighted average cost of capital ("WACC").[1] Based on my updated cost of capital analysis, I am recommending a cost of equity of 12.4 percent.

Based on my 12.4 percent recommended cost of equity, the Company's weighted cost of capital ("WACC") is 12.4 percent, as shown on Rebuttal Schedule D-1.

B. Comments on Updates to Direct Testimony.

Q. WHY IS YOUR COST OF EQUITY RECOMMENDATION LOWER IN YOU REBUTTAL THAN IN YOUR DIRECT TESTIMONY?

A. When I prepared my direct testimony in early December 2008, the economy was in the midst of a severe recession and a crisis was occurring in the financial markets. The Dow Jones average had fallen by 38 percent and the S&P 500 dropped by 40 percent in just a couple of months. During this period, there was a "flight to quality" that led to the traditional spread between required returns on Treasury securities and other assets increasing as investors turned away from common stocks and corporate bonds in favor of treasuries. During the past several months, both the economy and the financial markets have improved. Economists now believe the recession has ended, but also see a long sluggish recovery. As Value Line states "the evolving business upturn may be a checkered affair, with a succession of peaks and valleys along the way...Should [the] uneven recovery unfold, the stock market might remain quite volatile."[2]

There are several key factors that could cap the strength of economic recovery over the next few years. These include an unusually slow improvement in

[1] *See* Bourassa Dt. at 2.

[2] Value Line Selection and Opinion, October 16, 2009.

labor market conditions,[3] only modest gains in consumer spending, tight credit and a desire by households to pare debt, a slow recovery in residential investment due to still rising home foreclosures and persistently high inventories of unsold existing homes, a further pull-back in commercial construction, limited improvement in capital spending resulting from excess capacity that exists in many sectors, and still lack of capital available to small and mid-sized businesses.[4]

Q. SO HOW EXACTLY HAS THE COST OF EQUITY DROPPED SINCE YOU PREPARED YOUR DIRECT TESTIMONY?

A. My updated analysis indicates cost of equity is 12.4 percent, which is lower than the 13.2 percent indicated cost of equity in my direct testimony. My cost of equity estimates based on the discounted cash flow ("DCF") and the capital asset pricing model ("CAPM") ranged from 9.9 percent to 16.5 percent with a mid-point of 13.2 percent. Despite a 13.2 percent indicated cost of equity in my direct cost of equity analysis, my recommendation for the cost of equity was 12.8 percent.

C. <u>Summary of the Recommendations of Staff and RUCO.</u>

Q. PLEASE SUMMARIZE THE COST OF DEBT AND EQUITY RECOMMENDED BY STAFF AND RUCO, AND THEIR RESPECTIVE RECOMMENDATIONS FOR THE RATE OF RETURN ON FAIR VALUE RATE BASE.

A. Staff determined a cost of equity of 9.6 percent based on the average cost of equity produced by its DCF and CAPM models (10.3 percent) and a 70 basis point downward adjustment for BMSC's lower financial risk as compared to the publicly traded water utilities in Staff's sample group.[5] Staff did not consider any of

[3] The unemployment rate recently jumped to 9.8%, which is higher than the unemployment rate during the 2001 recession.

[4] Blue Chip Financial Forecasts, Vol. 28, No. 10, October 1, 2009.

[5] *See* Direct testimony of Juan C. Manrique ("Manrique Dt.") at 32 and 33.

BMSC's firm-specific risks other than financial risk. Like the Company, Staff is recommending a capital structure consisting of 100 percent equity.[6] Based on a capital structure of 0 percent debt and 100 percent equity, Staff determined the WACC for BMSC to be 9.6 percent.[7]

RUCO determined its recommended cost of equity, 8.22 percent, based on the average cost of equity of its DCF and CAPM results.[8] RUCO is also recommending a hypothetical capital structure of 40 percent debt and 60 percent equity.[9] RUCO's recommended cost of debt is 6.26 percent, based the average cost of debt for seven publicly traded water companies followed by Value Line.[10] Based on a hypothetical capital structure of 40 percent debt and 60 percent equity, RUCO computed a WACC of 7.43 percent, which is RUCO's recommended rate of return on FVRB.[11] RUCO also did not consider firm-specific risks other than financial risk.

III. RESPONSE TO STAFF'S COST OF CAPITAL ANALYSIS

A. Staff's Financial Risk Adjustment

Q. DID STAFF RECOMMEND A FINANCIAL RISK ADJUSTMENT?

A. Yes, and my primary criticism of Staff's financial risk adjustment is that a beta for BMSC is required to make this adjustment, yet BMSC does not have a beta because it is not publicly traded. Staff assumes the beta of the large publicly traded utility companies is the beta for BMSC. I believe that BMSC, if it were publicly

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[6] *Id.* at 34.

[7] *Id.*

[8] *See* Rigsby Dt. at 7.

[9] *Id.*

[10] *Id.*

[11] *Id.* at 8.

traded, would have a higher beta than the sample water utility companies.[12] In Chapter 7 of Morningstar's *Ibbotson SBBI 2009 Valuation Yearbook*, for example, Ibbotson reports that when betas are properly estimated, betas are larger for smaller companies than for larger companies. A higher beta for BMSC would result in a much lower financial risk adjustment using the Hamada method Staff employs.

A secondary criticism is that Staff ignores the higher risk of BMSC due to its small size. If Staff is going to make a financial risk adjustment for differences in the capital structures between Staff's water proxy group and BMSC, it should also consider a small firm risk premium to account for firm size differences. Ibbotson finds that even after accounting for differences in beta risk, small firms require an additional risk premium over and above the added risk premium indicated by differences in beta risk.[13] Another reviewer also reported evidence that the stocks of small water utilities, like BMSC, are more risky than the stocks of larger water utilities, such as those in the water utilities sample.[14] Even the California PUC conducted a study that showed smaller water utilities are more risky than larger ones.[15] Frankly, it seems to me indisputable that investors require higher returns on small company stocks as compared to large company stocks.

As a consequence of smaller firms having higher risks (after accounting for differences in beta risk), an additional small firm risk premium should be considered. In the end, differences in financial risk can be more than offset by the required small firm risk premium.

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[12] Bourassa Dt. at 37.

[13] *Ibbotson SBBI 2009 Valuation Yearbook* Chapter. 7 (Morningstar).

[14] Thomas M. Zepp, *Utility Stocks and the Size Effect – Revisited*, The Quarterly Review Economics and Finance, Vol. 43, Issue 3, 578-582 (Autumn 2003).

[15] Staff Report on Issues Related to Small Water Utilities, June 10, 1991 and CPUC Decision 92-03-093.

Q. HAVE YOU PREPARED AN ATTACHMENT SUMMARIZING YOUR ASSESSMENT OF THE ADDITIONAL RISK PREMIUMS REQUIRED FOR SMALLER FIRMS LIKE BMSC?

A. Yes. I have included at COC-RB Attachment 1 the results of an *Ibbotson* study using annual data reporting the size premium based upon firm size and return data provided in Morningstar *Ibbotson SBBI 2009 Valuation Yearbook* and information contained in a published work by Dr. Thomas M. Zepp. I have estimated that a small company risk premium in the range of 99 to 181 basis points is appropriate. To be conservative, I would estimate a small company risk premium of no less than 100 basis points is warranted for BMSC. Putting aside the fact that Staff's financial risk adjustment is too high because the beta for BMSC would be higher than the average beta of Staff's water proxy group, the upward 100 basis point small firm risk premium would more than offset the downward 70 basis point financial risk adjustment recommended by Staff.

Q. DO INVESTORS CONSIDER THESE RISKS?

A. Of course. Contrary to Mr. Manrique's assertion that the risks due to small size and risks associated with the Arizona regulatory requirements use of historic test years and limited out of period adjustments are "unique" risks,[16] the market risk for small utilities and small utilities doing business in Arizona, like BMSC, is important to investors, and these risks are not captured by the market data of the water utility proxy group Staff uses to estimate the cost of equity for BMSC. Again, none of the utilities in Staff's water proxy group are of comparable size to BMSC.[17] In fact, BMSC is but a small fraction of the size of the water utilities in Staff's water proxy group. Neither are any of the water utilities in Staff's water

[16] Manrique Dt. at 40.

[17] Bourassa Dt. at 19.

proxy group subject exclusively to Arizona regulation.[18] Had Mr. Manrique used a proxy group consisting of utilities of similar size to BMSC and primarily subject to Arizona regulation I would have no argument. But, sadly there is no such market data available.

In summary, as I testified, the criteria established by the Supreme Court in decisions such as *Bluefield Water Works* require the use of comparable companies, i.e., companies that would be viewed by investors as having similar risks. A rational investor would not regard BMSC has having the same level of risk as Aqua America or even Connecticut Water just because they all sell water under state regulation.[19]

Q. ARE YOU PERSUADED BY MR. MANRIQUE'S TESTIMONY ON PAGE 41, WHERE HE REFERENCES PRIOR COMMISSION DECISIONS THAT THE DID NOT FIND A FIRM SIZE PHENOMENON FOR REGULATED UTILITIES?

A. No. Frankly, failure to recognize a small firm risk existence despite an abundance of empirical financial evidence suggesting otherwise is another reason why it is more risky for smaller utilities to do business in Arizona. Investors do recognize the unfavorable regulatory environment here in Arizona. Standard and Poor's, for example, issued a report in November 2008 which ranked Arizona among the least credit supportive regulatory environments.[20] Arizona's regulatory environment may drive investors to invest in utilities in states with more favorable regulatory environments, such as California.[21] Three of the six utilities in the Staff's water

[18] *Id.* at 20-23.

[19] *Id.*

[20] *Assessing U.S. Utility Regulatory Environments*, Rating Directs, Standard and Poor's (November 7, 2008); *see also* Sorensen Rb. at 11.

[21] Bourassa COC Dt. at 15-16; *see also* Sorensen Rb. at 11.

proxy group are located in California, which offers a more favorable regulatory environment by using future test years and adjustor/balancing accounts in its rate-setting process. As a result, utilities in Arizona are finding it increasingly difficult to attract capital as investors invest their funds in less-risky regulatory environments.

B. Response to Staff' Criticisms of BMSC Cost of Capital Analysis

Q. PLEASE RESPOND TO MR. MANRIQUE'S TESTIMONY ON THE ARTICLE, "CHOICE AMONG METHODS OF ESTIMATING SHARE YIELD", BY GORDON, GORDON, AND GOULD, WHICH ARTICLE YOU REFERENCED AS SUPPORTING ESTIMATING THE DCF GROWTH RATE.

A. Mr. Manrique characterizes the article as merely an "article that describes more generally the methods exclusively using analysts' forecasts [as] 'popular and attractive models'; but the article does not support the conclusion that analyst forecasts should be used alone."[22] However, the article reported on a formal study conducted by the authors which concluded:

> We have compared the accuracy of four methods for estimating the growth component of the discounted cash flow yield on a share: pats growth in earnings (KEGR), past growth in dividends (KDGR, past retention growth rate (KBRG), and forecasts of growth by security analysts (KFRG)..... For our sample of utility shares, KFRG performed well, with KBRG, KDGR, and KEGR following in that order, and with KEGR a distant fourth....
>
> Before closing, we have three observations to make. First, the superior performance by KFRG should come as no surprise. All four estimates of growth rely upon past data, but in the case of KFRG a larger body of past data is used, filtered through a group of security analysts who adjust for

[22] Manrique Dt. at 36.

> abnormalities that are not considered relevant for future growth...[23]

As I testified, to the extent that past results provide useful indications of future growth prospects, analysts' forecasts or growth would already incorporate that information.[24] In addition, a stock's current price reflects known historic information on that company, including its past earnings history.[25] If investors rely on such analysts' growth rate forecasts those are the forecasts of relevance to the determination of equity costs.

Q. PLEASE COMMENT ON MR. MANRIQUE'S TESTIMONY ON PAGE 36-37 REFERENCING PROFESSOR GORDON'S REMARKS AT THE 30TH ANNUAL FORUM OF THE SOCIETY OF UTILITY AND REGULATORY FINANCIAL ANALYSTS.

A. First, let me state that I do not know the context upon which Professor Gordon made his remarks. Further, in the quoted remarks Professor Gordon does not say anything about past growth rates. There is no reference in the quotation as to which past growth rates (EPS, DPS, book value) should be used, if any, or what weighting past growth rates should be given when estimating the growth rate for the DCF model.[26] Having said that, Mr. Manrique confirms "Professor Gordon would temper the typically higher analysts' growth rates with the typically lower GNP growth rate."[27] I am sure Mr. Manrique would agree that I have done this in

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[23] David A. Gordon, Myron J. Gordon and Lawrence I Gould, *Choice Among Methods of Estimating Share Yield*, Journal of Portfolio Management 50-55 (Spring 1989).

[24] Bourassa Dt. at 32.

[25] *Id.*

[26] Staff has not provided Professor Gordon's complete remarks in their work papers.

[27] Manrique Dt. at 37.

my two-stage DCF model.[28] The result of my two-stage DCF model indicates a cost of equity of 11.7 percent. Compare that to Staff's overall DCF results of 9.8 percent. So, having tempered the analysts' growth rates I employ with a lower GNP, my estimate is still significantly greater than Staff's. This is the result of Staff's models being heavily weighted on low historical growth rates.

Q. DOES MR. MANRIQUE STATE THAT INVESTORS RELY ON ANALYST ESTIMATES?

A. Yes.[29] He also states that investors rely "to some extent on past growth as well." However, he does not provide support as to what extent investors rely on past growth rates, only that they are considered. Staff's approach to estimating the growth rate gives 50 percent weight to historic growth rates. If analyst estimates already consider past growth, then Staff vastly overstates the impact of past growth rates in its growth rates. And, by utilizing past growth rates that produce extremely low results, Staff biases its DCF results downward.

Q. PLEASE EXPLAIN.

A. I have prepared two exhibits that demonstrate the unrealistically low results produced by Staff's historical growth rates. COC-RB Attachment 2 and COC-RB Attachment 3 show the DCF results produced by Staff's historical DPS and EPS growth rates. For example, as shown in COC-RB Attachment 2, Staff's historical DPS growth rates produce indicated costs of equity *below* the cost of debt for 3 of the 6 publicly traded water utilities in Staff's water proxy group – one as low as 3.9 percent. The average indicated cost of equity is 6.6 percent, which is nearly at the current cost of Baa investment grade bonds at 6.5 percent and well below the expected Baa investment grade bond cost of 7.5 percent during the period of time

[28] Rebuttal Schedule D.4-10.

[29] Manrique Dt. at 37.

new rates will be in effect. As shown in COC-RB Attachment 3, Staff's historical EPS growth rate produces indicated costs of equity *below* the cost of debt for 3 of the 6 publicly traded water utilities in Staff's water proxy group – one as low as 4.9 percent. Again, the average indicated cost of equity is only 6.8 percent, not much above the current cost of Baa investment grade bonds and well below the expected cost of Baa investment grade bonds during the period of time new rates will be in effect. Thus, while Mr. Manrique criticizes my use of analyst estimates, he does not explain why growth rates which produce indicated costs of equity below the cost of debt are reasonable and should be given 50 percent weight in his DCF growth estimate computation or even why they should be considered in this case.

Q. DO YOU HAVE OTHER COMMENTS IN RESPONSE TO MR. MANRIQUE'S TESTIMONY ON ANALYST ESTIMATES?

A. Yes. Mr. Manrique's reliance on the study by David Dreman is puzzling.[30] Even though Mr. Dreman has criticized analysts' growth rates as being too optimistic, Mr. Dreman also says *investors rely on those forecasts*.

> We have also seen that in spite of high error rates being recognized for decades, neither analysts nor investors who religiously depend on them have altered their methods in any way.[31]

If investors rely on analysts' growth rate forecasts, those forecasts should be used to determine the cost of equity. Those growth rates influence the prices investors will pay for stocks and thus impact the dividend yields. The dividend yields change until the sum of the dividend yield plus the growth rate equals investors' perceived cost of equity. Had the growth forecasts been lower – as Mr.

[30] Manrique Dt. at 37.

[31] David Dreman, *Contrarian Investment Strategies: The Next Generation* 115-116 (Simon & Schuster 1998).

Manrique suggests they should be – the stock prices would be lower and dividend yields would be higher, but there would not necessarily be any difference in the ultimate estimate of the cost of equity.

Mr. Manrique's reliance on the quote from Jeremy Siegel that dividends and not earnings are meaningful is also puzzling.[32] The DCF model assumes, among other things, that a firm will have a stable dividend payout policy and a stable earned return on book value. Thus, the stock price, book value, dividends, and earnings all grow at the same rate. While it is appropriate to make such assumptions for forecasting purposes, these assumptions are frequently violated when examining historical data. As it turns out, the historical growth in the stock price, book value, dividends, and earnings for the water have not been the same.[33] As a result, estimates of long-term growth rates should take this into account.

IV. RESPONSE TO RUCO'S COST OF CAPITAL ANALYSIS

A. Use of Gas Utilities to Develop Cost of Equity

Q. HOW DOES THE SAMPLE OF WATER UTILITIES MR. RIGSBY USED TO ESTIMATE THE COST OF EQUITY COMPARE TO THE UTILITIES USED BY THE COMPANY AND STAFF?

A. Mr. Rigsby used three publicly traded water utilities. He used the three largest water utilities out of the six water utilities that I have used and Staff typical uses when performing its cost of capital analysis.

Q. DOES MR. RIGSBY ALSO USE SAMPLE GAS COMPANIES TO DEVELOP HIS ESTIMATE OF THE COST OF EQUITY? HOW DO THEY COMPARE TO THE SAMPLE WATER COMPANIES?

A. Yes. He uses ten natural gas companies. However, the sample gas utilities are less

[32] Manrique Dt. at 39.

[33] *See* Rebuttal Schedule D.4-3 and Rebuttal Schedule D.4-4.

risky and therefore are not comparable to water utilities. His sample water companies, for example, have an average beta of 0.75, while his sample gas companies have an average beta of just 0.67.[34] That means that the equity cost for the water utility should be greater than the gas companies, based on their relative riskiness.

The water utility sample has more systematic risk than the gas utility sample. Mr. Rigsby erroneously assumes that the gas utilities and water utility have the same systematic risk and are directly comparable, when they are not.

Q. CAN THE GAS UTILITIES BE USED TO ESTIMATE BMSC'S COST OF EQUITY?

A. Yes, if the results produced by the DCF and CAPM models are adjusted upward to reflect the water utilities' additional risk. Mr. Rigsby, however, has made no adjustment to account for the water utilities' additional risk.

Q. HAS THIS ISSUE EVER COME UP BEFORE?

A. Yes. In several prior cases, water utilities presented evidence of the cost of equity using financial data for a similar group of publicly traded gas companies, which at that time had a higher average beta than the water utility sample. In rejecting this evidence, the Commission adopted Staff's argument that because the water utility sample had a lower average beta than the gas utility sample, the cost of equity for the water utility should be lower. For example, in Arizona Water Company's Eastern Group rate case, the water utility sample had an average beta of 0.59, while the gas utility sample had an average beta of 0.69. Staff estimated that based on

[34] *See* RUCO Schedule WAR-7, page 1 of 2.

the difference in the two groups' betas, the sample gas companies has an equity cost that is 100 basis points higher than the water utilities.[35]

Q. WHAT IS THE IMPACT OF RUCO'S USE OF THE GAS UTILITIES TO ESTIMATE THE COST OF EQUITY IN THIS CASE?

A. By averaging the results of his equity cost estimate for the water utility sample with his equity cost estimate for the gas utility sample, Mr. Rigsby has depressed the cost of equity estimates. For example, the average of Mr. Rigsby's CAPM estimates for the water companies and gas companies are 6.37 percent and 5.93 percent, respectively. This is a 44 basis point difference.

Q. HOW WOULD AN APPROPRIATE RISK ADJUSTMENT BE CALCULATED?

A. By using the CAPM. As I explained above, the difference between the results produced by Mr. Rigsby's CAPM model is 44 basis points. Because of the method used by Mr. Rigsby to implement the CAPM, however, 44 basis points understates the required adjustment to properly reflect the gas utilities' lower investment risk. If my method and inputs are used instead, similar to the method used in the aforementioned Arizona Water Eastern Group case, the result is 160 basis points, calculated as follows:

	Rf		Beta		Rp		K
Historic MRP	3.0%	+	0.67	X	6.9%	=	7.6%
Current MRP	4.3%	+	0.67	X	16.9%	=	15.6%
Average Gas Utility Sample							11.6%
Average Water Utility Sample[36]							13.2%
Difference/Risk Adjustment							**1.6%**

[35] Decision No. 66849 at 21 (March 19, 2004); s*ee also Arizona-American Water Company* Decision No. 67093 at 27 (June 30, 2004).

[36] *See* Rebuttal Schedule D-4.13.

Given this difference, it is clearly inappropriate to simply average the gas utilities' equity cost with the water utilities' equity cost, as Mr. Rigsby has done. This error assumes that a typical gas utility has the same investment risk as a typical water utility, which is simply not the case at the present time. As a result, Mr. Rigsby's use of gas utilities depresses the cost of equity for BMSC.

B. Criticisms of RUCO's Implementation of the CAPM

Q. WHAT OTHER CONCERNS DO YOU HAVE WITH RESPECT TO MR. RIGBY'S CAPM ANALYSIS?

A. I have four other concerns with respect to Mr. Rigsby's CAPM analysis. First, Mr. Rigsby employs a geometric average in calculating the market risk premium in his CAPM. His choice to use geometric average depresses his cost of equity estimate downward. An arithmetic average is the correct approach to use in estimating the cost of capital, as various experts have explained.[37] In fact, the CAPM was developed on the premise of expected returns being averages and risk being measured with the standard deviation. As Dr. Morin states,

> Since the latter **[standard deviation]** is estimated around the arithmetic average, and not the geometric average, it is logical to stay with arithmetic averages to estimate the market risk premium. In fact, annual returns are uncorrelated over time, and the objective is to estimate the market risk premium for the next year, the arithmetic average is the best unbiased estimate of the premium.[38]

Attached as COC-RB Attachment 4 is an excerpt from Dr. Roger Morin's textbook on regulatory finance, which provides a detailed discussion of this issue.[39]

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[37] Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance* 156-157 (7th ed. 2003); Roger A. Morin, *New Regulatory Finance* 156-157 (Public Utility Reports, Inc. 2006) ("*Morin*"); *Ibbotson SBBI 2008 Valuation Yearbook* 77-78 (Morningstar).

[38] *Morin, supra*, at 157-157.

[39] *Morin* at 133-43.

Second, Mr. Rigsby uses the U. S. Treasury total returns in his computation when he should have used U.S. Treasury income returns. As I explained in my direct testimony, the market risk premium is calculated by subtracting the risk-free rate from the market return.[40] Mr. Rigsby erroneously used the average total return on a Treasury security rather than the average income return. As shown on Schedule WAR-7, at page 2, attached to Mr. Rigsby's direct testimony, the total return used to calculate the market risk premium was 5.6 percent. This was the average total return on an intermediate-term Treasury (1926-2008) as published in the *2009 Ibbotson SBBI Valuation Edition Yearbook* (Table 2-1). By contrast, the average income return for an intermediate-term Treasury security was 4.7 percent.

The reason that an average income return must be used, rather than the average total return, is quite straightforward. The CAPM is a risk premium methodology that is based on the premise that an investor expects to earn a return equal to the return on a risk-free investment plus a premium for assuming additional risk that is proportional to the security's market risk (i.e., its beta). U.S. Treasuries are commonly used as a proxy for the risk-free rate because they are backed by the United States government, effectively eliminating default risk. The income return is the portion of the total return that results from the bond's periodic cash flow, i.e., the interest payments. The income return provides an unbiased estimate of the riskless rate of return because an investor can hold the Treasury security to maturity and receive fixed interest payments with no capital loss or capital gain. If the total return on a Treasury security is used instead, additional risk is injected into the CAPM estimate, which is inconsistent with treating the security as a riskless asset. As explained by *Ibbotson*:

[40] Bourassa Dt. at 37.

> Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[41]

As a consequence of incorrectly using U.S. Treasury total returns and well as geometric means, RUCO's CAPM estimate dramatically understates the cost of equity for the water utility sample. If an intermediate-term Treasury security is used as the proxy for the risk-free rate of return, the market risk premium would increase to 6.9 percent from 6.1 percent using the conceptually correct arithmetic averages. If that market risk premium is substituted for the 6.1 percent market risk premium used by Mr. Rigsby, the arithmetic mean CAPM cost of equity for his water utility sample would increase from 7.08 percent to 7.69 percent – an increase of 61 basis points.

Third, Mr. Rigsby has ignored current market risk. This Commission has consistently approved the use of a current market risk premium in implementing the CAPM in water and wastewater utility rate cases. In the Chaparral City case,[42] for example, the Commission adopted cost of capital used an historic market risk

[41] *Ibbotson* at 75-76.

[42] *Chaparral City Water Company*, Decision No. 68176 (September 30, 2005).

premium and a current market risk premium in its CAPM estimates.[43] RUCO, however, has ignored current market risk in its CAPM estimates and has relied instead on incorrectly calculated historic market risk premiums.

Changes in the current market risk premium have been a significant factor in the cost of equity authorized by the Commission for water and wastewater utilities. In Arizona Water Company's Eastern Group case, filed in 2002, Staff computed a current market risk premium of 13.1 percent in its CAPM estimate, and relied on that market risk premium in estimating a cost of equity of 9.2 percent, using the same six sample water utilities.[44] At that time, the country was in the midst of a recession, and, according to Staff, interest rates had fallen to the lowest levels since the 1950s.[45] Moreover, the average beta of Staff's water utility sample group was only 0.59 at that time, indicating that investment risk for the water utility industry was low relative to the market.[46]

Two years later, Arizona Water Company filed a rate case for its Western Group systems. Interest rates had increased from the levels in 2003, and the average beta of the Staff's sample utilities had increased as well, indicating greater investment risk. However, Staff's cost of equity estimate was virtually identical to the Eastern Group case, 9.1 percent. [47] The primary reason was that Staff's current

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[43] *See* Direct Testimony of Alejandro Ramirez, Docket No. W-02113A-04-0616 (March 22, 2005); Surrebuttal Testimony of Alejandro Ramirez, Docket No. W-02113A-04-0616 (May 5, 2005).

[44] Decision No. 66849 at 21 (March 19, 2004); *see also* Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619, 24-25 (July 8, 2003).

[45] Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619, 5 (July 8, 2003).

[46] Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619, 23 (July 8, 2003); *see also* Decision No. 66849 at 20.

[47] Surrebuttal Testimony of Alejandro Ramirez, Docket No. W-01445A-04-0650, Sch. AXR-8 (May 25, 2005).

market risk premium had dropped from 13.1 percent to 7.8 percent.[48] The Commission, in adopting Staff's CAPM estimate, relied on this change, explaining that "while interest rates have gone up, the cost of equity for the market as a whole has decreased, while the cost of equity for utilities has remained relatively stable."[49]

Even more recently, in Black Mountain Sewer Corporation's rate case, the Commission relied on a further decline in the current market risk premium to support Staff's recommended 9.6 percent cost of equity.[50] In that case, interest rates and the average beta of the sample group were even higher than 2003 levels, and while the result produced by Staff's models was higher, the increase was not as large as would be expected.[51] The reason was that the current market risk premium had decreased to only 5.7 percent, reducing the result produced by the CAPM. Thus, while interest rates increased and the investment risk of the water utility sample had increased, Staff explained that those increases were offset by a further decline in the current market risk premium, indicating that the overall risk of the market had declined.[52]

As these decisions show, not only has the Commission consistently considered the current market risk premium, but changes in the current market risk premium have had a major impact on the cost of equity, offsetting changes in

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[48] *Id.*

[49] *Arizona Water Co. (Western Group)*, Decision No. 68302 at 38 (Nov. 14, 2005).

[50] *Black Mountain Sewer Corp.*, Decision No. 69164 (Dec. 5, 2006).

[51] In the Black Mountain case, the intermediate-term Treasury used by Staff in its CAPM was 4.8 percent, while the average beta of Staff's sample group was 0.74. Surrebuttal Testimony of Pedro M. Chaves, Docket No. SW-02361A-05-0657, Sch. PMC-2 (May 4, 2006). In Arizona Water's Eastern Group case, in contrast, the intermediate-term Treasury used by Staff in its CAPM was 3.3 percent, while the average beta of Staff's sample group was 0.59. Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619, Sch. JMR-7 (July 8, 2003).

[52] *Black Mountain Sewer Corp.*, Decision No. 69164 at 25-26 (Dec. 5, 2006).

interest rates and water utility betas in recent cases. Further, RUCO's witness has acknowledged the importance of considering current market conditions in determining the cost of equity:

> Consideration of the economic environment is necessary because trends in interest rates, present and projected levels of inflation, and the overall state of the U.S. economy determine the rate of return that investors earn on their invested funds. Each of these factors represent potential risks that must be weighed when estimating the cost of equity capital for a regulated utility and are, most often, the same factors considered by individuals who are also investing in non-regulated entities.[53]

In light of the current volatility in the financial markets, the failure to consider current market risk would grossly distort the CAPM result. Consequently, RUCO's use of two historic market risk premiums (one of which is conceptually wrong for the reasons given previously) without considering the impact of current market risk on investor expectations invalidates RUCO's cost of equity estimate.

Finally, and perhaps most importantly of all, three of the four of Mr. Rigsby's CAPM estimates (one for water and two for the gas utilities), as well as his overall CAPM result, are at or below the current cost of Baa investment grade bonds. The current cost of investment grade bonds in 6.5 percent. The following are the results of Mr. Rigsby's CAPM as shown on WAR-1, page 3 of 3:

Geometric mean CAPM estimate - water companies	5.66%
Arithmetic mean CAPM estimate - water companies	7.08%
Geometric mean CAPM estimate - gas companies	5.30%
Arithmetic mean CAPM estimate - gas companies	6.56%
Overall CAPM result	6.15%

[53] Rigsby Dt. at 38-39.

A simple reality check should have caused Mr. Rigsby to question his inputs to the CAPM. This clearly demonstrates that RUCO's methods are not only biased downward, but should not be used.

C. Criticisms of RUCO's Use of Hypothetical Capital Structure

Q. WHY DOES MR. RIGSBY PROPOSE THE USE OF A HYPOTHETICAL CAPITAL STRUCTURE?

A. Mr. Rigsby explains that his hypothetical capital structure is to account for the lower financial risk of BMSC when compared to his sample of publicly traded water companies.[54] His sample publicly traded water utilities had approximately 50.4 percent debt and 49.6 percent equity.[55] He advocates use of a 40 percent debt and 60 percent equity rather than a 50.4 percent debt and 49.6 percent equity because he believes that the higher level of equity in his hypothetical capital structure will compensate the Company's shareholder for any perceived higher levels of company specific risk.[56]

Q. HOW MUCH ADDITIONAL RETURN FOR COMPANY SPECIFIC RISK IS IMPLIED BY USING A 40 PERCENT DEBT AND 60 PERCENT EQUITY AS OPPOSED TO A 50.4 PERCENT DEBT AND 49.6 PERCENT EQUITY USING RUCO'S MODELS?

A. Less than 20 basis points. But this is an illusion. By recommending a hypothetical capital structure that assumes a higher amount of debt for rate making than actually exists, Mr. Rigsby effectively reclassifies investor equity investment to debt and then provides a return on that equity investment equal to Mr. Rigsby's proposed hypothetical debt cost of 6.26 percent. Mr. Rigsby concludes that the cost of

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[54] *Id.* at 55.

[55] *Id.* at 54.

[56] *Id.* at 55.

equity is 8.22 percent. But, by virtue of the hypothetical capital structure, RUCO provides an equity return of 6.26 percent on 40 percent of the shareholder's equity investment – 196 basis points below what even Mr. Rigsby would agree is the required return for equity (8.22 percent less 6.26 percent).

To make matters worse, RUCO witness, Mr. Moore, imputes hypothetical interest expense through interest synchronization in BMSC's income tax computation, which artificially lowers the Company's income taxes and revenue requirement. Together, the lower return provided to investors on equity capital and the lower revenue requirement due to lower income taxes result in a net negative equity risk premium of well over 200 basis points.

Q. WOULD AN ADDITIONAL 20 BASIS POINTS, IF IT WERE REAL, ADEQUATELY COMPENSATE BMSC FOR THE ADDITIONAL RISKS BMSC FACES COMPARED TO THE LARGE PUBLICLY TRADED UTILITIES?

A. No. As I discussed earlier in my testimony, I believe a risk premium above the estimated cost of equity is warranted for BMSC on the order of 100 basis points.

Q. HAS FINANCIAL RISK BEEN ACCOUNTED FOR USING A HYPOTHETICAL CAPITAL STRUCTURE IN PRIOR WATER AND WASTEWATER RATE CASES?

A. Only in Gold Canyon, which I mentioned above and which is on appeal. In the last BMSC case, the Commission rejected the exact position advanced by RUCO in this case as "results oriented."[57] Instead, the "typical" method, as RUCO recognized in this case, is by a direct financial risk adjustment to the cost of equity. Downward financial risk adjustments adopted by the Commission have typically been based upon the Hamada method as described previously.

[57] Decision No. 69164 at 20.

Q. ARE DOWNWARD ADJUSTMENTS TO THE COST OF EQUITY FOR FINANCIAL RISK BY THIS COMMISSION COMMON?

A. No. Downward adjustments to the cost of equity for financial risk are not adopted as often as one would think. The downward adjustment often depends on whether a reasonable return on equity is afforded to the utility based on consideration of all of the evidence in the case. In some cases, even though the Hamada indicates a higher downward adjustment, the cost of equity is adjusted downward less than what may be indicated by the Hamada adjustment. In the Bella Vista Water Company case,[58] for example, the Hamada adjustment indicated an 89 basis point reduction to the cost of equity which would have resulted in an 8.4 percent return on equity. However, Staff did not recommend an 8.4 percent cost of equity, but rather recommended the low end of its cost of equity range of 9.1 percent to 9.5 percent.[59] The Commission ultimately adopted Staff's recommended 9.1 percent.[60] In the prior BMSC rate case,[61] Staff's cost of equity analysis produced an indicated cost of equity of 9.60 percent (before adjusting for financial risk). Staff's calculated financial risk adjustment using the Hamada methodology was 50 basis points but Staff did not recommend a downward adjustment in that case.[62] Ultimately, the Commission, based on the evidence in that case, adopted a 9.6 percent return on equity.[63]

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[58] Decision No. 65350 (November 1, 2002).

[59] *See* Direct Testimony of William S. Reiker, Docket No. W-02465A-01-0776. 26-27 (April 29, 2002).

[60] Decision No. 65350 at 23.

[61] Decision No. 69164 (December 5, 2006).

[62] *See* Surrebuttal Testimony of Pedro M. Chaves, Docket SW-02361A-05-0657, Sch. PMC-2 (May 4, 2006).

[63] Decision No. 69164 at 27.

The bottom line is that downward adjustments for financial risk must be used cautiously. Final consideration must always be given to whether the result is fair and reasonable under the circumstances. One reason for this is that basis for the cost of capital analyses are often based on large publicly traded water companies, which are not directly comparable to the relatively small water and sewer utilities in Arizona.[64] There are also considerations as to the requirements set forth in the *Hope* and *Bluefield* cases.

Q. IF MR. RIGSBY HAD COMPUTED A FINANCIAL RISK ADJUSTMENT USING THE HAMADA METHOD WHAT WOULD IT HAVE BEEN?

A. If Mr. Rigsby had performed a Hamada type financial risk adjustment, his financial risk adjustment would have been about 30 basis points. Subtracting this from his overall cost of equity result of 8.22 percent would have put his final estimate at 7.92 percent. This is approximately 50 basis points higher than his WACC of 7.43 percent.

D. Criticisms of RUCO's Cost of Debt

Q. PLEASE COMMENT ON MR. RIGSBY'S HYPOTHETICAL COST OF DEBT.

A. As already mentioned, Mr. Rigsby's proposed cost of debt on his proposed 40 percent hypothetical debt is 6.26 percent. He bases this debt cost on the average weighted cost of debt for the water utilities in his water proxy group. But, these are

[64] Black Mountain Sewer has more zero cost capital in its capitalization than the large publicly traded water utilities. All things being equal, this results in a lower capital cost per dollar of plant-in service. But, the higher proportions of zero cost capital do not come without risk to the Company. CIAC funded plant receives no recovery of depreciation in rates. This plant will have to eventually be replaced. Further, earnings are lower which means a lower earnings cushion to pay debt holders, absorb increases in operating expenses as well as lower cash flows available to make plant replacements.

large publicly traded utilities, most of which have bond ratings. Mr. Rigsby assumes that BMSC could raise debt capital at this cost. I seriously doubt it could.

Q. DOES THAT CONCLUDE YOUR TESTIMONY?

A. Yes.

BOURASSA
COST OF CAPITAL
SCHEDULES

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Summary of Cost of Capital

Exhibit
Rebuttal Schedule D-1
Page 1
Witness: Bourassa

Line No.		End of Test Year				End of Projected Year			
	Item of Capital	Dollar Amount	Percent of Total	Cost Rate	Weighted Cost	Dollar Amount	Percent of Total	Cost Rate	Weighted Cost
6	Long-Term Debt[1]	-	0.00%	9.40%	0.00%	-	0.00%	9.40%	0.00%
8	Stockholder's Equity[2]	3,922,058	100.00%	12.40%	12.40%	4,311,330	100.00%	12.40%	12.40%
10	Totals	$ 3,922,058	100.00%		12.40%	$ 4,311,330	100.00%		12.40%

[1] Excluded long-term debt for Scottsdale Treatment Capacity	$	1,010,649	. See D-2
[2] Adjusted for correction to accummulated depreciation of	$	322,862	. See Direct B-2 Page 2
[3] Adjusted for correction to accummulated depreciation of	$	(97,641)	. See Rebuttal B-2, page 2
[4] Adjusted for correction to accummulated amortization	$	(271,031)	. See Direct B-2 Page 2
[5] Adjusted for deferred income taxes	$	170,554	. See Direct B-2 Page 6
[7] Adjusted for deferred income taxes	$	24,344	. See Rebuttal B-2, page 6

SUPPORTING SCHEDULES:
Rebuttal D-2
Rebuttal D-3
Rebuttal D-4

RECAP SCHEDULES:

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Cost of Long Term Debt

Exhibit
Rebuttal Schedule D-2
Page 1
Witness: Bourassa

Line No.	Description of Debt	End of Test Year Amount Outstanding	Annual Interest	Interest Rate	Weighted Cost	End of Projected Year Amount Outstanding	Annual Interest	Interest Rate	Weighted Cost
1	Loan for Scottsdale Treatment Capacity	659,546	74,518	9.40%	6.13%	613,181	71,388	9.40%	6.13%
2	Loan for Scottsdale Treatment Capacity	351,103	39,325	9.40%	3.27%	327,694	36,010	9.40%	3.27%
3			-		0.00%	-	-	0.00%	0.00%
4			-		0.00%	-	-	0.00%	0.00%
5									
6									
7									
8									
9									
10									
11									
12									
13	Totals	$ 1,010,649	$ 113,843		9.40%	$ 940,875	$ 107,398		9.40%
14									
15	Supporting Schdules:								
16	E-2								
17									
18									
19									
20									
21									

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Cost of Preferred Stock

Exhibit
Rebuttal Schedule D-3
Page 1
Witness: Bourassa

Line No.	Description of Issue	End of Test Year Shares Outstanding	Amount	Dividend Requirement	End of Projected Year Shares Outstanding	Amount	Dividend Requirement
1							
2							
3	NOT APPLICABLE, NO PREFERRED STOCK ISSUED OR OUTSTANDING						
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17	SUPPORTING SCHEDULES:				RECAP SCHEDULES:		
18					Rebuttal D-1		
19							
20							

Black Mountain Sewer Corporation
Test Year Ended June 30, 2008
Cost of Common Equity

Exhibit
Rebuttal Schedule D-4
Page 1
Witness: Bourassa

Line No.	
1	
2	The Company is proposing a cost of common equity of 12.4%.
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	SUPPORTING SCHEDULES:
18	Rebuttal D-4.0 to D-4.13
19	
20	

RECAP SCHEDULES:
Rebuttal D-1

Black Mountain Sewer Corporation
Summary of Results

Exhibit
Rebuttal Schedule D-4.0
Witness: Bourassa

Line No.	Method	Low	High	Midpoint
1				
2				
3				
4	Method	Low	High	Midpoint
5	DCF Constant Growth	10.0%	15.3%	12.6%
6	DCF Sustainable Growth	9.5%	11.8%	10.7%
7	DCF Two-Stage	9.9%	13.8%	11.9%
8				
9	Average DCF Results	9.8%	13.6%	11.7%
10				
11	CAPM	8.5%	17.8%	13.2%
12				
13	Average DCF and CAPM Results	9.2%	15.7%	12.4%
14				
15				
16	Recommended cost of equity			12.4%
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				

Black Mountain Sewer Corporation
Selected Characteristics of Water Utilities

Exhibit
Rebuttal Schedule D-4.1
Witness: Bourassa

Line No.	Company	% Water Revenues	Operating Revenues (millions)	Net Plant (millions)	S&P Bond Rating	Moody's Bond Rating
1.	American States	82%	$ 299.1	$ 701.8	A	A2
2.	Aqua America	87%	$ 604.6	$ 2,466.5	AA-	NR
3.	California Water	97%	$ 378.2	$ 929.5	NR	NR
4.	Connecticut Water	85%	$ 61.3	$ 239.2	AAA	NR
5.	Middlesex	90%	$ 89.3	$ 307.2	A	NR
6.	SJW Corp.	95%	$ 213.8	$ 476.8	NR	NR
	Average	89%	$ 274.4	$ 853.5		
	Black Mountain Sewer Corporation	0%	$ 1.6	$ 5.9	NR	NR

Source:
AUS Utility Reports (October 2009)

Black Mountain Sewer Corporation
Capital Structures of Water Utilities

Exhibit
Rebuttal Schedule D-4.2
Witness: Bourassa

No.		Book Value		Market Value	
		Long-Term Debt	Common Equity	Long-Term Debt	Common Equity
	Company				
1.	American States	47.0%	53.0%	33.2%	66.8%
2.	Aqua America	55.4%	44.6%	30.7%	69.3%
3.	California Water	43.0%	57.0%	25.6%	74.4%
4.	Connecticut Water	47.9%	52.1%	34.7%	65.3%
5.	Middlesex	49.8%	50.2%	40.5%	59.5%
6.	SJW Corp.	47.7%	52.3%	33.0%	67.0%
	Average	48.5%	51.5%	32.9%	67.1%
	Black Mountain Sewer Corporation	19.3%	80.7%	N/A	N/A

Source:
Value Line Analyzer Data (October 16, 2009)

Black Mountain Sewer Corporation
Comparisons of Past and Future Estimates of Growth

Exhibit
Rebuttal Schedule D-4.3
Page 1
Witness: Bourassa

Line No.	Company	Five-year historical compound annual changes: Price	Book Value	DPS	EPS	Average Future Growth[1]
1	1. American States	8.84%	4.66%	1.99%	14.72%	6.88%
2	2. Aqua America	6.73%	9.84%	8.45%	5.07%	8.90%
3	3. California Water	14.51%	7.30%	0.70%	9.44%	7.90%
4	4. Connecticut Water	0.29%	3.50%	1.44%	0.45%	11.00%
5	5. Middlesex	Negative	6.34%	1.84%	7.85%	7.67%
6	6. SJW Corp.	17.82%	8.96%	5.81%	3.48%	10.00%
7						
8	GROUP AVERAGE	9.64%	6.77%	3.37%	6.84%	8.72%
9	GROUP MEDIAN	8.84%	6.82%	1.91%	6.46%	8.40%

[1] See Rebuttal Schedule D-4.5

Sources:
Value Line Data
Yahoo Finance

Black Mountain Sewer Corporation
Comparisons of Past and Future Estimates of Growth

Exhibit
Rebuttal Schedule D-4.4
Page 1
Witness: Bourassa

Line No.	Company	Ten-year historical compound annual changes Price	Book Value	DPS	EPS	Average Future Growth[1]
1	1. American States	9.72%	4.61%	1.47%	3.68%	6.88%
2	2. Aqua America	9.75%	9.39%	7.18%	6.20%	8.90%
3	3. California Water	8.42%	3.68%	0.91%	2.74%	7.90%
4	4. Connecticut Water	6.28%	3.76%	1.23%	1.45%	11.00%
5	5. Middlesex	7.37%	3.98%	1.93%	2.29%	7.67%
6	6. SJW Corp.	14.89%	4.85%	5.13%	3.64%	10.00%
7						
8	GROUP AVERAGE	9.40%	5.05%	2.97%	3.33%	8.72%
9	GROUP MEDIAN	9.07%	4.30%	1.70%	3.19%	8.40%
10						
11	[1] See Rebuttal Schedule D-4.5					
12						
13	Sources:					
14	Value Line Data					
15	Yahoo Finance					

Black Mountain Sewer Corporation
Analysts Forecasts of Earnings Per Share Growth

Exhibit
Rebuttal Schedule D-4.5
Witness: Bourassa

Line No.		(1)	(2)		(3)	(4)
		EPS GROWTH				Average
	Company	Zacks	Morningstar	Yahoo	Value Line	Growth (G) (Cols 1-3)
1	1. American States	7.00%	7.00%	4.00%	9.50%	6.88%
2	2. Aqua America	8.00%	8.80%	8.80%	10.00%	8.90%
3	3. California Water	8.00%	7.30%	7.30%	9.00%	7.90%
4	4. Connecticut Water	9.00%		15.00%	9.00%	11.00%
5	5. Middlesex	8.00%		8.00%	7.00%	7.67%
6	6. SJW Corp.	10.00%	10.00%	10.00%	10.00%	10.00%
7						
8						
9	GROUP AVERAGE	8.33%	8.28%	8.85%	9.08%	8.72%
10	GROUP MEDIAN					8.40%
11						
12	Sources:					
13	Value Line Investment Analyzer Data October 16, 2009					
14	Zacks Investment Research Site October 16, 2009					
15	Morningstar Website October 16, 2009					
16	Yahoo Finance October 16, 2009					
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

Black Mountain Sewer Corporation
Estimates of Sustainable Growth

Exhibit
Rebuttal Schedule D-4.6
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)	(5)
	Company	Retention Ratio	Rate of Return	br Growth	sv Growth	Average Sustainable Growth (Cols 3+4)
1.	American States	0.51	12.00%	6.09%	1.62%	7.71%
2.	Aqua America	0.50	11.50%	5.80%	0.31%	6.11%
3.	California Water	0.49	12.00%	5.93%	1.14%	7.07%
4.	Connecticut Water					
5.	Middlesex					
6.	SJW Corp.					
	GROUP AVERAGE	0.50	11.83%	5.94%	1.02%	6.96%
	GROUP MEDIAN	0.50	12.00%	5.93%	1.14%	7.07%

Sources:
Value Line Data

Black Mountain Sewer Corporation
Estimates of sv Growth

Exhibit
Rebuttal Schedule D-4.7
Witness: Bourassa

Line No.	Company	(1) Stock Financing Rate	(2) Current Market to Book Ratio	(3) v	(4) sv Growth
1	1. American States	3.69%	1.78	0.44	1.62%
2	2. Aqua America	0.48%	2.81	0.64	0.31%
3	3. California Water	2.08%	2.20	0.55	1.14%
4	4. Connecticut Water				na
5	5. Middlesex				na
6	6. SJW Corp.				na
7					
8	GROUP AVERAGE	2.09%	2.26	0.54	1.02%
9	GROUP MEDIAN	2.08%	2.20	0.55	1.14%
10					
11	Sources:				
12	Value Line Data				

Black Mountain Sewer Corporation
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model
Using Projected EPS Growth

Exhibit
Rebuttal Schedule D-4.8
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)	(5)	(6)
	Company	Spot Price (P_0)	Current Dividend (D_0)	Current Dividend Yield (D_0/P_0)	Expected Dividend Yield (D_1/P_0)[1]	Growth (g)[2]	Indicated Cost of Equity k=Div Yld + g (Cols 3+4)
1	1. American States	36.08	1.04	2.88%	3.08%	6.88%	10.0%
2	2. Aqua America	16.65	0.54	3.24%	3.53%	8.90%	12.4%
3	3. California Water	39.56	1.18	2.98%	3.22%	7.90%	11.1%
4	4. Connecticut Water	22.80	0.88	3.86%	4.28%	11.00%	15.3%
5	5. Middlesex	15.44	0.70	4.53%	4.88%	7.67%	12.5%
6	6. SJW Corp.	22.66	0.65	2.87%	3.16%	10.00%	13.2%
7							
8	GROUP AVERAGE			3.40%	3.69%	8.72%	12.4%
9	GROUP MEDIAN						12.5%

Sources:
Value Line Investment Analyzer Data October 16, 2009

[1] Expected Dividend Yield = $D_1/P_0 = D_0/P_0 * (1+g)$.
[2] See Rebuttal Schedules D-4.5

Black Mountain Sewer Corporation
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Sustainable Growth

Exhibit
Rebuttal Schedule D-4.9
Witness: Bourassa

Line No.		(1)	(2)		(3)	(4)	(5)	(6)	(7)
						Sustainable Growth[2]			Indicated Cost of Equity
	Company	Spot Price (P_0)	Current Dividend (D_0)	Current Dividend Yield (D_0/P_0)	Expected Dividend Yield (D_1/P_0)[1]	br	vs	br+sv Growth (g)	k=Div Yld + g (Cols 3+6)
1	1. American States	36.08	1.04	2.88%	3.10%	6.09%	1.62%	7.71%	10.8%
2	2. Aqua America	16.65	0.54	3.24%	3.44%	5.80%	0.31%	6.11%	9.5%
3	3. California Water	39.56	1.18	2.98%	3.19%	5.93%	1.14%	7.07%	10.3%
4	4. Connecticut Water	22.80	0.88	3.86%	4.13%			6.96%	11.1%
5	5. Middlesex	15.44	0.70	4.53%	4.85%			6.96%	11.8%
6	6. SJW Corp.	22.66	0.65	2.87%	3.07%			6.96%	10.0%
7									
8	GROUP AVERAGE				3.63%			6.96%	10.6%
9	GROUP MEDIAN								10.5%

Sources:
Value Line Investment Analyzer Data October 16, 2009

[1] Expected Dividend Yield = $D_1/P_0 = D_0/P_0 * (1+g)$.
[2] See Rebuttal Schedules D-4.6 and 4.7

Black Mountain Sewer Corporation
Discounted Cash Flow Analysis (Water)
Two-Stage Growth - Projected

Exhibit
Rebuttal Schedule D-4.10
Witness: Bourassa

Line No.		(1)	(2)		(3)	(4)	(5)	(6)	(7)
						Projected Growth Rates			
	Company	Spot Price (P_0)	Current Dividend (D_0)	Current Dividend Yield (D_0/P_0)	Expected Dividend Yield (D_1/P_0)[1]	Near Term[1]	Long Term (GDP)2	Average[3]	Indicated Cost of Equity
1	1. American States	36.08	1.04	2.88%	3.08%	6.88%	6.70%	6.82%	9.9%
2	2. Aqua America	16.65	0.54	3.24%	3.51%	8.90%	6.70%	8.17%	11.7%
3	3. California Water	39.56	1.18	2.98%	3.21%	7.90%	6.70%	7.50%	10.7%
4	4. Connecticut Water	22.80	0.88	3.86%	4.23%	11.00%	6.70%	9.58%	13.8%
5	5. Middlesex	15.44	0.70	4.53%	4.87%	7.67%	6.70%	7.35%	12.2%
6	6. SJW Corp.	22.66	0.65	2.87%	3.12%	10.00%	6.70%	8.91%	12.0%
7									
8	GROUP AVERAGE				3.67%			8.06%	11.7%
9	GROUP MEDIAN								11.9%

[1] Expected Dividend Yield = $D_1/P_0 = D_0/P_0 * (1+g)$.
[2] Growth in GDP from 1938 to 2008.
[3] Near term growth given weighting of .67

Black Mountain Sewer Corporation
Market Betas

Exhibit
Rebuttal Schedule D-4.11
Witness: Bourassa

Line No.		Company	
1			
2	1.	American States	0.80
3	2.	Aqua America	0.65
4	3.	California Water	0.75
5	4.	Connecticut Water	0.85
6	5.	Middlesex	0.80
7	6.	SJW Corp.	0.95
8		Average	**0.80**
9			
10	Source:		
11	Value Line Investment Analyzer Data October 16, 2009		
12			
13			
14			
15			
16			

Black Mountain Sewer Corporation
Computation of Current Market Risk Premium

Exhibit
Rebuttal Schedule D-4.12
Witness: Bourassa

Line No.	Month	Dividend Yield (D_0/P_0)[1]	Expected Dividend Yield (D_1/P_0)[2]	+	Growth (g)[3]	=	Expected Market Return (k)	-	Monthly Average 30 Year Treasury Rate[4]	=	Market Risk Premium (MRP)
1											
2											
3	**Month**										
4	Aug 2006	2.20%	2.20%	+	11.69%	=	13.89%	-	5.00%	=	8.89%
5	Jul	2.27%	2.27%	+	10.91%	=	13.18%	-	5.11%	=	8.07%
6	Aug	2.37%	2.37%	+	11.92%	=	14.29%	-	4.93%	=	9.36%
7	Sept	2.31%	2.31%	+	11.16%	=	13.47%	-	4.79%	=	8.68%
8	Oct	2.45%	2.45%	+	11.90%	=	14.35%	-	4.77%	=	9.58%
9	Nov	2.60%	2.60%	+	13.41%	=	16.01%	-	4.52%	=	11.49%
10	Dec 2007	2.61%	2.61%	+	13.51%	=	16.12%	-	4.52%	=	11.60%
11	Jan 2008	2.67%	2.67%	+	15.19%	=	17.86%	-	4.33%	=	13.53%
12	Feb	2.74%	3.19%	+	16.47%	=	19.66%	-	4.52%	=	15.14%
13	Mar	2.85%	3.35%	+	17.64%	=	20.99%	-	4.39%	=	16.60%
14	April	2.69%	3.11%	+	15.73%	=	18.84%	-	4.44%	=	14.40%
15	May	2.73%	3.15%	+	15.51%	=	18.66%	-	4.60%	=	14.06%
16	Jun	3.13%	3.71%	+	18.51%	=	22.22%	-	4.69%	=	17.53%
17	Jul	3.15%	3.74%	+	18.61%	=	22.35%	-	4.57%	=	17.78%
18	Aug	3.06%	3.59%	+	17.08%	=	20.67%	-	4.50%	=	16.17%
19	Sept	3.07%	3.66%	+	19.30%	=	22.96%	-	4.27%	=	18.69%
20	Oct	4.31%	5.63%	+	30.53%	=	36.16%	-	4.17%	=	31.99%
21	Nov	4.97%	6.71%	+	35.02%	=	41.73%	-	4.00%	=	37.73%
22	Dec 2008	4.44%	5.76%	+	29.62%	=	35.38%	-	2.87%	=	32.51%
23	Jan 2009	4.86%	6.32%	+	30.02%	=	36.34%	-	3.13%	=	33.21%
24	Feb	5.50%	7.43%	+	35.13%	=	42.56%	-	3.59%	=	38.97%
25	Mar	4.21%	5.36%	+	27.33%	=	32.69%	-	3.64%	=	29.05%
26	April	3.66%	4.47%	+	22.05%	=	26.52%	-	3.76%	=	22.76%
27	May	3.46%	4.14%	+	19.67%	=	23.81%	-	4.23%	=	19.58%
28	Jun	3.25%	3.87%	+	19.16%	=	23.03%	-	4.52%	=	18.51%
29	Jul	2.90%	3.37%	+	16.31%	=	19.68%	-	4.41%	=	15.27%
30	Aug	2.82%	3.22%	+	14.21%	=	17.43%	-	4.37%	=	13.06%
31	Sept	2.71%	3.06%	+	13.09%	=	16.15%	-	4.19%	=	11.96%
32											
33	Recent 24 Months Avg	3.37%	4.05%		20.21%	=	24.26%		4.21%	=	20.05%
34	Recent 12 Months Avg	3.92%	4.95%	+	24.35%	=	29.29%	-	3.91%	=	25.38%
35	Recent 9 Months Avg	3.71%	4.58%	+	21.89%	=	26.47%	-	3.98%	=	22.49%
36	Recent 6 Months Avg	3.13%	3.69%	+	17.42%	=	21.10%	-	4.25%	=	16.86%
37	Recent 3 Months Avg	2.81%	3.22%	+	14.54%	=	17.76%	-	4.32%	=	13.43%
38											
39	Recommended Market Risk Premium										**16.86%**
40											

41 [1] Average Current Dividend Yield (D_0/P_0) of dividend paying stocks. Data from Value Line Investment Analyzer Software Data - Value Line 1700 Stocks

42 [2] Expected Dividend Yield (D_1/P_0) equals average current dividend yield (D0/P0) times one plus growth rate(g).

43 [3] Average 3-5 year price appreciation (annualized). Data from Value Line Investment Analyzer Software Data - Value Line 1700 Stocks

44 [4] Montly average 30 year U.S. Treasury. Federal Reserve.

Black Mountain Sewer Corporation
Capital Asset Pricing Model (CAPM)

Exhibit
Rebuttal Schedule D-4.13
Witness: Bourassa

Line No.		Rf	+	beta[3]	x	Rp	=	k
1								
2								
3	Historical Market Risk Premium CAPM[1]	3.0%	+	0.80	x	6.9% [4]	=	8.5%
4								
5	Current Market Risk Premium CAPM[2]	4.3%	+	0.80	x	16.9% [5]	=	17.8%
6								
7								
8	Average							13.2%

[1] Average of 5/7 and 10 Year Treasuries Federal Reserve October 15, 2009 (Rf)
[2] Federal Reserve October 15, 2009 30 year Treasury rate (Rf)
[3] Value Line Investment Analyzer data. See Rebuttal Schedule D-4.11
[4] Historical Market Risk Premium from (Rp) MoriningStar SBBI 2009 Yearbook Table A-2 Intermediate-Horizon ERP 1926-2008
[5] Computed using DCF constant growth method to determine current market return on Value Line 1700 stocks and CAPM with beta of 1.0 to compute Current Market Risk Premium (Rp). *See Rebuttal Schedule D-4.12.*

COC-RB ATTACHMENT 1

Black Mountain Sewer Corporation
Size Premium[1]

Attachment 1

Line No.		Beta(β)	Size Premium	Risk Premium for Small Water Utilities[7]
6	Mid-Cap Companies[2]	1.12	0.90%	
8	Low-Cap Companies[3]	1.25	1.56%	
10	Micro-Cap Companies[4]	1.50	2.83%	
12	Decile 10[5]	1.62	4.43%	1.81%

		Risk Premium for Small Water Utilities
20	Estimated Risk Premium for small water utilities[6]	0.99%

[1] Data from Table 7-11 of Morningstar, *Ibbotson SBBI 2009 Valuation Yearbook.*
[2] Mid-Cap companies includes companies with market capitalization between $1,850 million and $7,360 million.
[3] Low-Cap companies includes companies with market capitalization between $454 million and $1,849 million.
[4] Micro-Cap companies includes companies with market capitalization less than $453 million.
[5] Decile 10 includes companies with market capitalization between $1.6 million and $219 million.
[6] From Table 2, Thomas M. Zepp, "Utility Stocks and the Size Effect Revisited," *The Quarterly Review of Economics and Finance*, 43 (2003), 578-582.
[7] Computed as the weighted differences between the Decile 10 risk premium and the indicated risk premiums for the sample water utilities as shown below. Excludes risk due to differences in beta.

		Market Cap. (Millions)	Class	Size Premium	Difference to Decile 10	Weight	Weighted Size Premium
1.	American States	$ 587	Low-Cap	1.56%	2.87%	0.166667	0.48%
2.	Aqua America	$ 2,365	Mid-Cap	0.90%	3.53%	0.166667	0.59%
3.	California Water	$ 794	Low-Cap	1.56%	2.87%	0.166667	0.48%
4.	Connecticut Water	$ 193	Decile 10	4.43%	0.00%	0.166667	0.00%
5.	Middlesex	$ 205	Decile 10	4.43%	0.00%	0.166667	0.00%
6.	SJW Corp.	$ 408	Micro-Cap	2.83%	1.60%	0.166667	0.27%
	Weighted Size Premium for small companies						1.81%

COC-RB ATTACHMENT 2

Black Mountain Sewer Corporation
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Historical
Using Compound 10 Year Historical Dividend Growth

Attachment 2

Line No.		[1]	[2]	[3]	[4]	[5]
	Company	Current Dividend Yield (D_0/P_0)[1]	Expected Dividend Yield (D_1/P_0)[2]	Staff Historical Div. Growth (g)[3]	Indicated Equity Cost k=Div Yld + G (Cols 2+3)	Indicated Equity Cost k=Div Yld + G (Cols 2+3)
1	1. American States	2.88%	2.93%	1.76%	4.7%	*
2	2. Aqua America	3.24%	3.47%	6.97%	10.4%	10.4%
3	3. California Water	2.98%	3.01%	0.90%	3.9%	*
4	4. Connecticut Water	3.86%	3.91%	1.34%	5.3%	*
5	5. Middlesex	4.53%	4.63%	2.08%	6.7%	6.7%
6	6. SJW Corp.	2.87%	3.03%	5.51%	8.5%	8.5%
7						
8	GROUP AVERAGE			3.1%	6.6%	8.6%
9	GROUP MEDIAN			3.4%	6.0%	8.5%
10						
11	Current Baa interest rate (October 16, 2009)[4]				6.5%	
12						
13	Blue Chip Forecast Baa Corporate Bond Interest Rate 2012Top 10[5]				8.5%	
14	Blue Chip Forecast Baa Corporate Bond Interest Rate 2012 Bottom 10[5]				6.7%	
15	Blue Chip Forecast Baa Corporate Bond Interest Rate 2012 Consensus[5]				7.5%	

* Indicated equity cost below current cost of debt (Baa) or negative growth.

[1] Spot Dividend Yield = D_0/P_0. See Scehdule D.4-8

[2] Expected Dividend Yield = $D_1/P_0 = D_0/P_0 * (1+g)$.

[3] Growth rate (g). From Staff work papers.

[4] Federal Reserve. Baa investment grade bonds.

[5] Blue Chip Financial Forecast (June 2009)

COC-RB ATTACHMENT 3

Black Mountain Sewer Corporation
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Historical
Using Compound 10 Year Historical EPS Growth

Attachment 3

Line No.		(1)	[2]	[3]	[4]	[5]
	Company	Current Dividend Yield (D_0/P_0)[1]	Expected Dividend Yield (D_1/P_0)[2]	Staff Historical EPS Growth (g)[3]	Indicated Equity Cost k=Div Yld + G (Cols 2+3)	Indicated Equity Cost k=Div Yld + G (Cols 2+3)
1	1. American States	2.88%	2.99%	3.68%	6.7%	6.7%
2	2. Aqua America	3.24%	3.44%	6.20%	9.6%	9.6%
3	3. California Water	2.98%	3.06%	2.74%	5.8%	*
4	4. Connecticut Water	3.86%	3.90%	1.05%	4.9%	*
5	5. Middlesex	4.53%	4.66%	2.88%	7.5%	7.5%
6	6. SJW Corp.	2.87%	2.96%	3.05%	6.0%	*
7						
8	GROUP AVERAGE		3.5%	3.3%	6.8%	8.0%
9	GROUP MEDIAN		3.3%	3.0%	6.3%	7.5%
10						
11	Current Baa interest rate (Ocotber 16, 2009)[4]				6.5%	
12						
13	Blue Chip Forecast Baa Corporate Bond Interest Rate 2012 Top 10[5]				8.5%	
14	Blue Chip Forecast Baa Corporate Bond Interest Rate 2012 Bottom 10[5]				6.7%	
15	Blue Chip Forecast Baa Corporate Bond Interest Rate 2012 Consensus[5]				7.5%	
16						
17	* Indicated equity cost below current cost of debt (Baa) or negative growth.					
18						
19						
20	[1] Spot Dividend Yield = D_0/P_0. See Scehdule D.4-8					
21	[2] Expected Dividend Yield = $D_1/P_0 = D_0/P_0 * (1+g)$.					
22	[3] Growth rate (g). Staff work papers.					
23	[4] Federal Reserve. Baa investment grade bonds.					
24	[5] Blue Chip Financial Forecast (June 2009)					
25						

COC-RB ATTACHMENT 4

NEW
REGULATORY
FINANCE

Roger A. Morin, PhD

2006
PUBLIC UTILITIES REPORTS, INC.
Vienna, Virginia

Appendix 4-A
Arithmetic versus Geometric Means in Estimating the Cost of Capital

The use of the arithmetic mean appears counter-intuitive at first glance, because we commonly use the geometric mean return to measure the average annual achieved return over some time period. For example, the long-term performance of a portfolio is frequently assessed using the geometric mean return.

But performance appraisal is one thing, and cost of capital estimation is another matter entirely. In estimating the cost of capital, the goal is to obtain the rate of return that investors expect, that is, a target rate of return. On average, investors expect to achieve their target return. This target expected return is in effect an arithmetic average. The achieved or retrospective return is the geometric average. In statistical parlance, the arithmetic average is the unbiased measure of the expected value of repeated observations of a random variable, not the geometric mean. This appendix formally illustrates that only arithmetic averages can be used as estimates of cost of capital, and that the geometric mean is not an appropriate measure of cost of capital.

The geometric mean answers the question of what constant return you would have had to achieve in each year to have your investment growth match the return achieved by the stock market. The arithmetic mean answers the question of what growth rate is the best estimate of the future amount of money that will be produced by continually reinvesting in the stock market. It is the rate of return which, compounded over multiple periods, gives the mean of the probability distribution of ending wealth.

While the geometric mean is the best estimate of performance over a long period of time, this does not contradict the statement that the arithmetic mean compounded over the number of years that an investment is held provides the best estimate of the ending wealth value of the investment. The reason is that an investment with uncertain returns *will have a higher ending wealth* value than an investment which simply earns (with certainty) its compound or geometric rate of return every year. In other words, more money, or terminal wealth, is gained by the occurrence of higher than expected returns than is lost by lower than expected returns.

In capital markets, where returns are a probability distribution, the answer that takes account of uncertainty, the arithmetic mean, is the correct one for estimating discount rates and the cost of capital.

While the geometric mean is appropriate when measuring performance over a long time period, it is incorrect when estimating a risk premium to compute the cost of capital.

TABLE 4A-1
GEOMETRIC VS. ARITHMETIC RETURNS

	Stock A	Stock B
1996	50.0%	11.61%
1997	−54.7%	11.61%
1998	98.5%	11.61%
1999	42.2%	11.61%
2000	−32.3%	11.61%
2001	−39.2%	11.61%
2002	153.2%	11.61%
2003	−10.0%	11.61%
2004	38.9%	11.61%
2005	20.0%	11.61%
Standard Deviation	64.9%	0.0%
Arithmetic Mean	26.7%	11.6%
Geometric Mean	11.6%	11.6%

Theory

The geometric mean measures the magnitude of the returns, as the investor starts with one portfolio and ends with another. It does not measure the variability of the journey, as does the arithmetic mean. The geometric mean is backward looking. There is no difference in the geometric mean of two stocks or portfolios, one of which is highly volatile and the other of which is absolutely stable. The arithmetic mean, on the other hand, is forward-looking in that it does impound the volatility of the stocks.

To illustrate, Table 4A-1 shows the historical returns of two stocks, the first one is highly volatile with a standard deviation of returns of 65% while the second one has a zero standard deviation. It makes no sense intuitively that the geometric mean is the correct measure of return, one that implies that both stocks are equally risky since they have the same geometric mean. No rational investor would consider the first stock equally as risky as the second stock. Every financial model to calculate the cost of capital recognizes that investors are risk-averse and avoid risk unless they are adequately compensated for undertaking it. It is more consistent to use the mean that fully impounds risk (arithmetic mean) than the one from which risk has been removed (geometric mean). In short, the arithmetic mean recognizes the uncertainty in the stock market while the geometric mean removes the uncertainty by smoothing over annual differences.

Empirical Evidence

If both the geometric and arithmetic mean returns over the 1926–2004 data are regressed against the standard deviation of returns for the firms in the

deciles, the arithmetic mean outperforms the geometric mean in this statistical regression. Moreover, the constant of arithmetic mean regression matches the average Treasury bond rate and therefore makes economic sense while the constant for the geometric mean matches nothing in particular. This is simply because the geometric mean is stripped of volatility information and, as a result, does a poor job of forecasting returns based on volatility.

The following illustration is frequently invoked in defense of the geometric mean. Suppose that a stock's performance over a two-year period is representative of the probability distribution, doubling in one year ($r_1 = 100\%$) and halving in the next ($r_2 = -50\%$). The stock's price ends up exactly where it started, and the geometric average annual return over the two-year period, r_g, is zero:

$$\begin{aligned} 1 + r_g &= [(1 + r_1)(1 + r_2)]^{1/2} \\ &= [(1 + 1)(1 - .50)]^{1/2} = 1 \\ r_g &= 0 \end{aligned}$$

confirming that a zero year-by-year return would have replicated the total return earned on the stock. The expected annual future rate of return on the stock is not zero, however. It is the arithmetic average of 100% and −50%, $(100 - 50)/2 = 25\%$. There are two equally likely outcomes per dollar invested: either a gain of \$1 when $r = 100\%$ or a loss of \$0.50 when $r = -50\%$. The expected profit is $(\$1 - \$.50)/2 = \$.25$ for a 25% expected rate of return. The profit in the good year more than offsets the loss in the bad year, despite the fact that the geometric return is zero. The arithmetic average return thus provides the best guide to expected future returns.

What Academics Have to Say

Bodie, Kane, and Marcus (2005) cite:

> Which is the superior measure of investment performance, the arithmetic average or the geometric average? The geometric average has considerable appeal because it represents the constant rate of return we would have needed to earn in each year to match actual performance over some past investment period. It is an excellent measure of *past* performance. However, if our focus is on future performance, then the arithmetic average is the statistic of interest because it is an unbiased estimate of the portfolio's expected future return (assuming, of course, that the expected return does not change over time). In contrast, because the geometric return over a sample period is always less than the arithmetic mean,

> it constitutes a downward-biased estimator of the stock's expected return in any future year.
>
> Again, the arithmetic average is the better guide to future performance.

Another way of stating the Bodie, Kane, Marcus argument in favor of the arithmetic mean is that it is the best estimate of the future value of the return distribution because it represents the expected value of the distribution. It is most useful for determining the central tendency of a distribution at a particular time, that is, for cross-sectional analysis. The geometric mean, on the other hand, is best suited for measuring an investment's compound rate of return over time, that is, for time-series analysis. This is the same argument made by *Ibbotson Associates* (2005) where it is shown, using probability theory, that future terminal wealth is given by compounding the arithmetic mean, and not the geometric mean. In other words, if we accept the past as prologue, the best estimate of a future year's return based on a random distribution of the prior years' returns is the arithmetic average. Statistically, it is our best guess for the holding-period return in a given year.

Brigham and Ehrhardt (2005) in their widely used corporate finance text point out that the arithmetic average is more consistent with CAPM theory, as one of its key underpinning assumptions is that investors are supposed to focus, in their portfolio decisions, upon returns in the next period and the standard deviation of this return. To the extent that this next period is one year, the preference for the arithmetic mean, which derives from a set of single one year period returns, follows. It is also noteworthy that one of the crucial assumptions inherent in the CAPM is that investors are single-period expected utility of terminal wealth maximizers who choose among alternative portfolios on the basis of each portfolio's expected return and standard deviation.

Brealey, Myers, and Allen (2006) in their leading graduate textbook in corporate finance opt strongly for the arithmetic mean. The authors illustrate the distinction between arithmetic and geometric averages and conclude that arithmetic averages are appropriate when estimating the cost of capital:

> The proper uses of arithmetic and compound rates of return from past investments are often misunderstood. Therefore, we call a brief time-out for a clarifying example.
>
> Suppose that the price of Big Oil's common stock is $100. There is an equal chance that at the end of the year the stock will be worth $90, $110, or $130. Therefore, the return could be −10 percent, +10 percent or +30 percent (we assume that Big Oil does not pay a dividend). The expected return is 1/3(−10+10+30) = +10 percent.

If we run the process in reverse and discount the expected cash flow by the expected rate of return, we obtain the value of Big Oil's stock:

$$PV = \frac{110}{1.10} = \$100$$

The expected return of 10 percent is therefore the correct rate at which to discount the expected cash flow from Big Oil's stock. It is also the opportunity cost of capital for investments which have the same degree of risk as Big Oil.

Now suppose that we observe the returns on Big Oil stock over a large number of years. If the odds are unchanged, the return will be -10 percent in a third of the years, $+10$ percent in a further third, and $+30$ percent in the remaining years. The arithmetic average of these yearly returns is

$$\frac{-10 + 10 + 30}{3} = +10\%$$

Thus the arithmetic average of the returns correctly measures the opportunity cost of capital for investments of similar risk to Big Oil stock.

The average compound annual return on Big Oil stock would be

$$(.9 \times 1.1 \times 1.3)^{1/3} - 1 = .088, \text{ or } 8.8\%$$

less than the opportunity cost of capital. Investors would not be willing to invest in a project that offered an 8.8 percent expected return if they could get an expected return of 10 percent in the capital markets. The net present value of such a project would be

$$NPV = -100 + \frac{108.8}{1.1} = -1.1$$

Moral: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return (geometric averages).

(Richard A. Brealey, Stewart C. Myers, and Paul Allen, *Principles of Corporate Finance*, 8th Edition, Irwin McGraw-Hill, 2006, page 156–7.)

The widely cited Ibbotson Associates publication also contains a detailed and rigorous discussion of the impropriety of using geometric averages in estimating the cost of capital.[12]

[12] Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2005 Yearbook, Valuation Edition*, page 75.

> The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return.
>
> The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods.
>
> The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean) of its past values.

In their widely publicized research on the market risk premium, Dimson, Marsh and Staunton (2002) state

> The arithmetic mean of a sequence of different returns is always larger than the geometric mean. To see this, consider equally likely returns of +25 and −20 percent. Their arithmetic mean is 2½ percent, since (25 − 20)/2 = 2½. Their geometric mean is zero, since (1 + 25/100) × (1 − 20/100) − 1 = 0. But which mean is the right one for discounting risky expected future cash flows? For forward-looking decisions, the arithmetic mean is the appropriate measure.
>
> To verify that the arithmetic mean is the correct choice, we can use the 2½ percent required return to value the investment we just described. A $1 stake would offer equal probabilities of receiving back $1.25 or $0.80. To value this, we discount the cash flows at the arithmetic mean rate of 2½ percent. The present values are respectively $1.25/1.015 = $1.22 and $0.80/1.025 = $0.78, each with equal probability, so the value is $1.22 × ½ + $0.80 × ½ = $1.00. If there were a sequence of equally likely returns of +25 and −20 percent, the geometric mean return will eventually converge on zero. The 2½ percent forward-looking arithmetic mean is required to compensate for the year-to-year volatility of returns.

Lastly, on the practical side, Bruner, Eades, Harris, and Higgins (1998) found that 71% of the texts and tradebooks in their extensive survey of practice supported use of an arithmetic mean for estimation of the cost of equity.

Mean Reversion Argument

Some academics have argued that if stock returns were expected to revert to a trend, this would suggest the use of a geometric mean since the geometric mean is, by definition, an estimate of a smoothed long-run trend increment. These same academics have argued that the historical estimate of the market risk premium ("MRP") is upward-biased by the buoyant performance of the stock market prior to 2002, and because of the extraordinary and unusually high realized MRPs in those years, investors expect a return to lower MRPs in the future, bringing the average MPR to a more "normal" level.

The presence or absence of mean reversion is an empirical issue. The empirical findings are weak and highly contradictory; the empirical evidence is inconclusive and unconvincing, certainly not enough to support the "mean reversion" hypothesis. The weight of the empirical evidence on this issue is that the more sophisticated tests of mean reversion in the MRP demonstrate that the realized MRP over the last 75 years or so was almost perfectly free of mean reversion, and had no statistically identifiable time trend. It is also noteworthy that most of these studies were performed prior to the stock market's debacle in 2000–2002, years of extraordinary and unusually low realized MRPs. The stock market's dismal performance of 2000–2002 has certainly taken the wind out of the mean reversion school's sails.

An examination of historical MRPs reveals that the MRP is random with no observable pattern. To the extent that the estimated historical equity risk premium follows what is known in statistics as a random walk, one should expect the equity risk premium to remain at its historical mean. Therefore, the best estimate of the future risk premium is the historical mean.

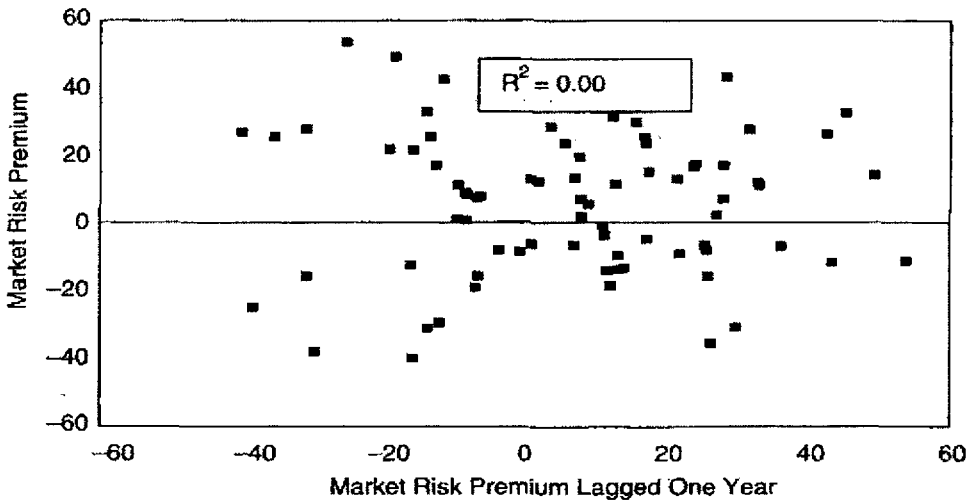
Ibbotson Associates (2005) find no evidence that the market price of risk or the amount of risk in common stocks has changed over time:

> Our own empirical evidence suggests that the yearly difference between the stock market total return and the U.S. Treasury bond income return in any particular year is random . . . there is no discernable pattern in the realized equity risk premium. (Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2005 Yearbook, Valuation Edition,* pages 74–75)

In statistical parlance, there is no significant serial correlation in successive annual market risk premiums, that is, no trend. Ibbotson Associates go on to state that it is reasonable to assume that these quantities will remain stable in the future (*Id.*):

> The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean)

FIGURE 4A-1
MARKET RISK PREMIUM 1926–2004
Year-to-Year Correlation



of its past values. (Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2004 Yearbook, Valuation Edition*, page 75)

Nowhere is it suggested by Ibbotson Associates that the market risk premium has declined over time.

Because there is little evidence that the MRP has changed over time, it is reasonable to assume that these quantities will remain stable in the future. Figure 4A-1 shows the relationship, or the lack of relationship, between year-to-year MRPs reported in the Ibbotson Associates Valuation Yearbook, 2005 edition, for the 1926–2004 period. The relationship is virtually absent, as indicated by the low R^2 of zero between successive MRPs. In other words, there is no history in successive MRPs as indicated by the zero serial correlation coefficient.

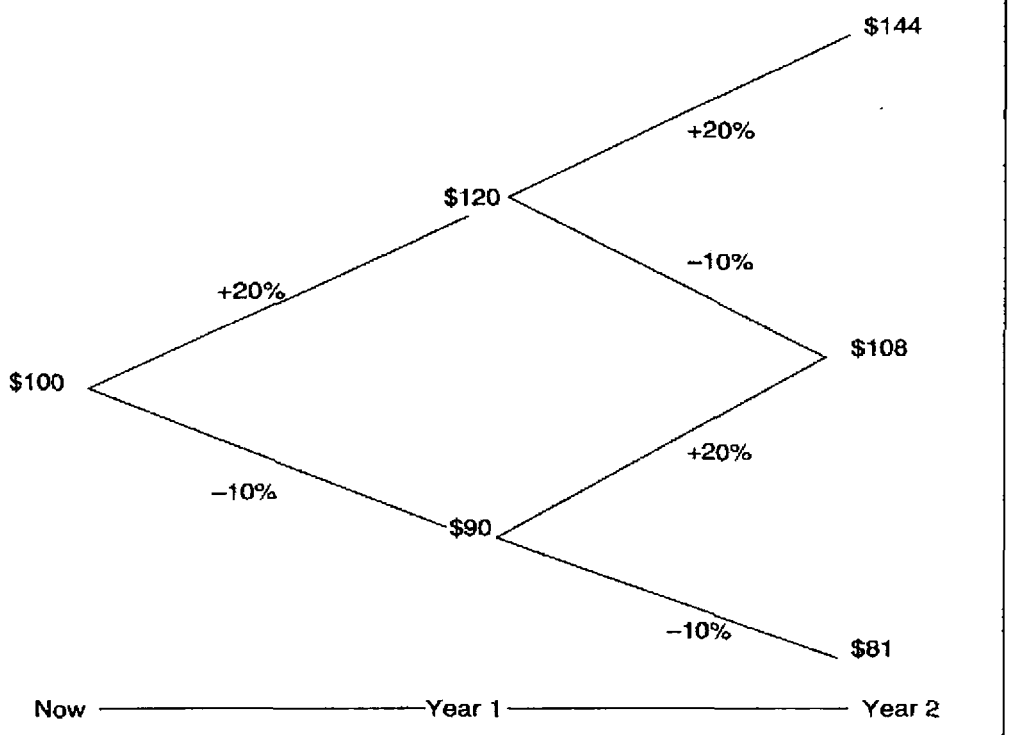
In short, the determination of the cost of capital with the CAPM requires an unbiased estimate of the expected annual return. The expected arithmetic return provides the appropriate measure for this purpose.

Formal Demonstration

This section shows why arithmetic rather than geometric means should be used for forecasting, discounting, and estimating the cost of capital.[13] By

[13] This section is adapted from a similar treatments and demonstration in Brealey, Myers, and Allen (2006) and Ibbotson Associates (2005).

FIGURE 4A-2
POSSIBLE STOCK PRICES



definition, the cost of equity capital is the annual discount rate that equates the discounted value of expected future cash flows (from dividends and the sale of the stock at the end of the investor's investment horizon) to the current market price of a share in the firm. The discount rate that equates the discounted value of future expected dividends and the end of period expected stock price to the current stock price is a prospective arithmetic, rather than a prospective geometric, mean rate of return. Since future dividends and stock prices cannot be predicted with certainty, the "expected" annual rate of return that investors require is an average "target" percentage rate around which the actual, year-by-year returns will vary. This target rate is, in effect, an arithmetic average.

A numerical illustration will clarify this important point. Consider a non-dividend paying stock trading for $100 which has, in every year, an equal chance of appreciating by 20% or declining by 10%. Thus, after one year, there is an equal chance that the stock's price will be $120 and an equal chance the price will be $90. Figure 4A-2 presents all possible eventualities after two periods have elapsed (the rates of return are presented at the end of the lines in the diagram).

The possible stock prices are shown in the following table.

TABLE 4A-2 STOCK PRICES AFTER TWO PERIODS	
Price	*Chance*
$144	1 chance in 4
$108	2 chances in 4
$ 81	1 chance in 4

The expected future stock price after two periods is then:

$$1/4\ (\$144) + 2/4\ (\$108) + 1/4\ (\$81) = \$110.25$$

The cost of equity capital is calculated as the discount rate that equates the present value of the future expected cash flows to the current stock price. In the present simple example, the only cash flow is the gain from selling the stock after two periods have elapsed. Thus, using the expected stock price of $110.25 calculated above, the expected rate of return is that r, which solves the following equation:

$$\text{Current Stock Price} = \frac{\text{Expected Stock Price}}{(1 + r)^2}$$

The factor $(1 + r)^2$ discounts the expected stock price to the present. Substituting the numerical values, we have:

$$\$100 = \frac{\$110.25}{(1+r)^2}$$

$$r = 5\%$$

Thus, the cost of equity capital is 5%. This 5% cost of equity capital is equal to the prospective arithmetic mean rate of return, which is the probability-weighted average single period rate of return on equity. Since in every period there is an equal chance that the stock's return will be 20% or −10%, the probability-weighted average is:

$$1/2\ (20\%) + 1/2\ (-10\%) = 5\%$$

However, the 5% cost of equity capital is not equal to the prospective geometric mean rate of return, which is a probability-weighted average of the possible *compounded rates of return* over the two periods. Now consider the prospective geometric mean rate of return. Table 4A-3 shows the possible compounded rates of return over two periods, and the probability of each.

Thus, the prospective geometric mean rate of return is:

$$1/4\ (20\%) + 2/4\ (3.92\%) + 1/4\ (-10\%) = 4.46\%$$

TABLE 4A-3
STOCK PRICES AND RETURNS AFTER TWO PERIODS

Price	Chance	Compounded Return
$144	1 chance in 4	20.00%
$108	2 chances in 4	3.92%
$ 81	1 chance in 4	−10.00%

This return is not equal to the 5% cost of equity capital.

The example can easily be extended to include the case of a dividend-paying company and will reach the same conclusion: the implied discount rate calculated in the DCF model is an expected arithmetic rather than an expected geometric mean rate of return.

The foregoing analysis shows that it is erroneous to use a prospective multi-year geometric mean rate of return as a "target" rate of return for each year of the period. If, for example, investors currently require an expected future rate of return on an investment of 13% each year, then 13% is the appropriate annual rate of return on equity for ratemaking purposes. Consequently, in using a risk premium approach for the purposes of rate of return regulation, the single-year annual required rate of return should be estimated using arithmetic mean risk premiums.

It should be pointed out that the use of the arithmetic mean does not imply an investment holding period of one year. Rather, it is premised on the uncertainty with respect to each year's return during the holding period, however many years that may be. When computing the arithmetic average of historic annual returns in order to calculate the average return (expected value of the return), every achieved return outcome is one possible future outcome for each year the security will be held. Each historic return has an equal probability of occurring during each year of the holding period. The resulting expected value of the risk premium is the arithmetic average of all of the past premiums considered, regardless of the length of the expected holding period.